

FEBRUARY '61

MODERN TEXTILES

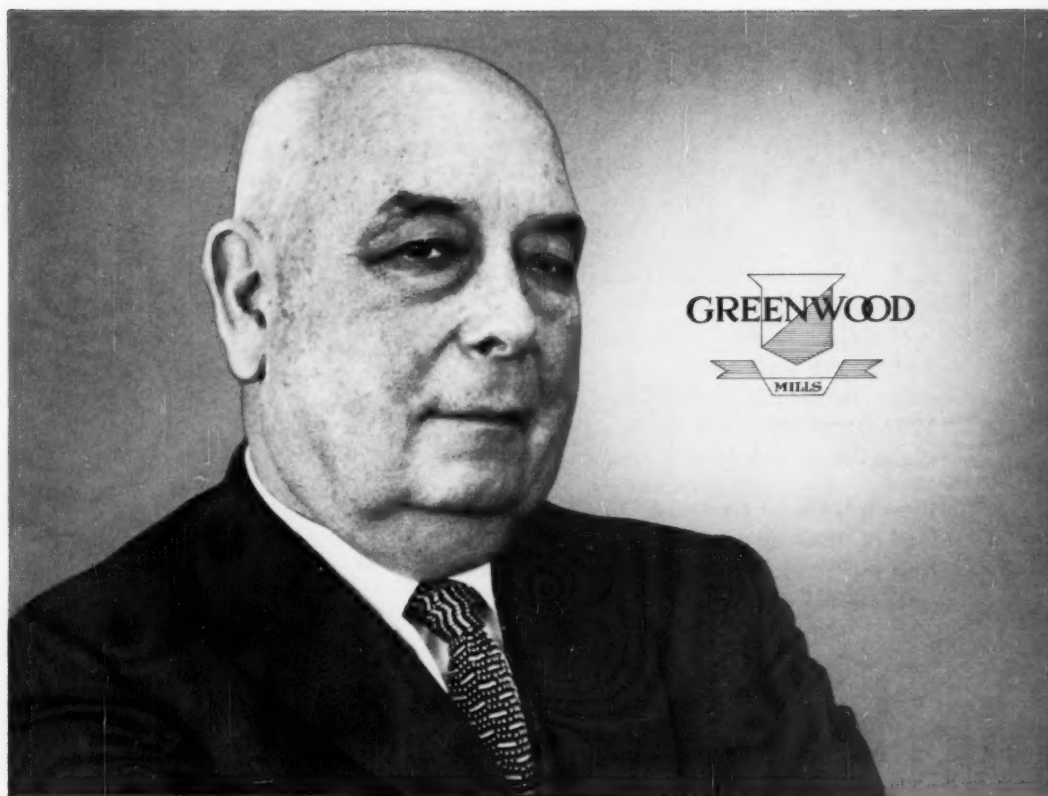
MAGAZINE

Specializing in Man-Made Fibers and Blends since 1925

FIBERS

FABRICS

FINISHES



Greenwood's
MARVIN R.
CROSS—

"customers are
harder to get
than orders"—
story page 21

WOVEN STRETCH FABRICS—NEW TEXTILE FRONTIER

New method for printing carpets

Schreiner calendering of lace

How nonwovens can be improved

AND TEN MORE USEFUL ARTICLES AND TIMELY REPORTS

A Report on the DAN RIVER MILLS Cocker Slasher Installation



In 1959, Dan River Mills integrated their slasher operations as shown in the picture above. These four machines (2 GH and 2 1954 models) have replaced eight other slashers of varying types and ages.

These four Cocker Slashers easily carry a load of 2547 looms, running everything from prints to fancies and stripes—yarn counts 20s to 50s—and from 4700 ends 32/1 to 9540 ends 32/1.

Minimum Loom Beam Width
50 Inches

Maximum Loom Beam Width
107¾ Inches

Maximum Loom Beam Head Diameter
32 Inches

Speeds . . .

Dye Beams up to 150 ypm
Stripes up to 150 ypm
4770 ends 32/1—150 ypm
9540 ends 32/1—79 ypm
Top Operating Speed—150 ypm
Heaviest Production set—79 ypm
Average Production operating on 120 hours per week on shift for shift basis—69,716 lbs. per slasher.

**Write for
Full Information**

COCKER MACHINE & FOUNDRY COMPANY

IN CANADA:
Contact W. S. Clark
Montreal, Canada
Oxford 7-2242

IN MEXICO:
Ing. J. Via, Jr.
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**WORLD'S LARGEST DESIGNERS
AND BUILDERS OF COMPLETE
WARP PREPARATORY EQUIPMENT**

SONOCO PRODUCTS COMPANY
CASE HISTORY NO. **638**



PROBLEM: Discoloration of Yarn

The problem was caused by lacquer bleeding on the yarn. It was assumed that this was due to the effect of the coning oil on the lacquer tip of the cone. Investigation by the customer revealed that only certain cone tips were so affected. From this he concluded that Sonoco's lacquer tips varied in quality and composition. Samples of the customer's coning oil along with samples of the discolored yarn were submitted for testing.

In Sonoco's laboratories it was determined that the sample of coning oil had no effect on the lacquer. Oil was then extracted from the damaged yarn and tests showed that this oil did attack the lacquer almost immediately. This indicated a distinct difference between the coning oil and the oil extracted from the yarn. This was confirmed by the use of special analytical equipment.

Further investigation revealed that oils extracted from yarns supplied by certain manufacturers would cause lacquer softening. It was also learned that oil from yarn supplied by other manufacturers would not affect the lacquer. The study proved the problem was created, not by the customer's coning oil nor Sonoco's lacquer, but rather by the spin finish on the particular raw yarn.

When you buy from Sonoco, technical service of this type is an added benefit. Only Sonoco in its field provides the continuous research, product development, and integrated manufacturing needed to meet the ever-changing requirements of the textile industry.

SONOCO

Products for Textiles



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February, 1961

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Synthetic Organic Chemical Manufacturers
Association 41 E. 42nd St., New York
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Inc. 469 Seventh Ave., New York

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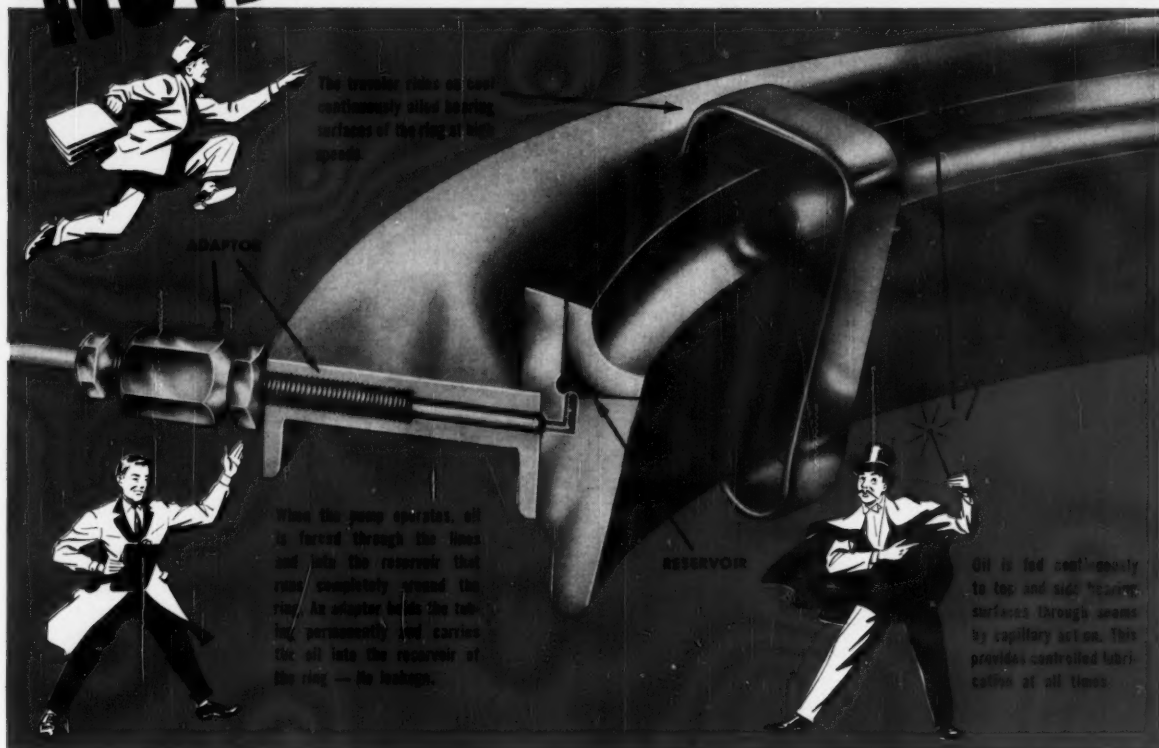
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Controlled, Automatic Pressure Lubrication Ideal When Used on "M" Type HERR Conical Rings!



Each stroke of the oil pump piston is timed to provide the minimum amount of oil to lubricate the path of the traveler. No excess or waste!

RESULTS :

1. Cooler operation of Ring and Traveler.
2. Provides longer traveler life.
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4. Positive assurance of correct oil supply.
5. Faster operation possible.
6. Less ends-down.
7. Oil waste eliminated.
8. No oilcans, no dripping, no overfilling. No labor or supervision required.
9. Keeps costs down.

Always a step ahead, Herr "M" Type Rings are now designed for pressure lubrication from a centralized lubrication system. Oil cups have been eliminated. The oil is introduced through newly designed adapters directly to the annular supply reservoir. (This reservoir runs completely around the ring.) From this reservoir the oil moves continuously by capillary action through the top and side seams. This controlled lubrication assures just the right amount of oil to the traveler. Controlled lubrication because of the special design of Herr "M" Type Rings is entirely self contained. There is no excessive oil, no waste—no overflow of oil to coat other parts of the machine. It is clean lubrication insuring clean yarn without increased maintenance.

Write for complete information.

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FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES

Draper Business Better

There are now over 1,600 Draper shuttleless looms in successful operation, according to Thomas W. West, president of Draper Corp. He said that the range of fabrics being woven at present is more limited than anticipated; therefore, the major part of research effort is concentrated on broadening this base, and "we are fully confident of ultimate success in this effort."

Commenting on the company's estimated 1960 results, West said a backlog for conventional looms was reported to be ahead of last year, although the slowing down of activity in the textile industry has affected incoming new orders. November, 1960, production of 800 to 1,000 looms of all types per month is scheduled into the second quarter of 1961. West pointed out that customer inquiries, which historically are an indication of future business, continued to be received in good volume.

Commenting on estimated results for 1960, West noted that consolidated net sales should be over \$60 million, an increase of nearly 20% from the 1959 sales of \$51,240,000. On this basis, the company's profit for the year is estimated at around \$2.85 per share, which would be a 55% increase over the 1959 figure of \$1.84 per share.

Vycron-Avron Weave

Ponemah Mills has placed in production a new broadcloth weave of 50% Vycron polyester and 50% Avron rayon, for use in the wash-and-wear field. The construction, Ponemah reports, is being sampled by converters for the women's casual, shirt dress and blouse trade. Mill officials state that a sometimes noted polyester stiffness is overcome without loss of performance by the combination of Avron's high tensile strength and Vycron's resiliency in a lower than usual polyester percentage. Vycron is a product of Beaunit Mills. Vitel, the resin from which Vycron is manufactured, is made by Goodyear.

New Courtaulds Rayon

Courtaulds (Alabama) Inc. has announced the availability of a new permanently crimped cross-linked rayon, known as Corval II. It replaces the uncrimped cross-linked rayon introduced by the company as Corval in 1958. The new product will be sold under the registered trademark Corval in deniers from 1½ through 15 in all normal lengths of semi-dull luster. Price of the new fiber has been reduced from 40 cents a pound to 37 cents.

Courtaulds asserts that Corval II has bulk and cover superior to other manmade cellulosic fibers. It may be processed on all systems of spinning, and dyed with all classes of cellulosic dyestuffs. It is expected to find volume application in blends and combinations with cotton, wool, triacetate, acrylics and polyesters in a wide range of fabrics in men's and women's wear as well as in the domestics and linen field. Courtaulds will continue to sell its other cross-linked rayon, Topel, at 37 cents a pound.

Better Rug Backing Asked

Standardization of specification for jute backing used by the tufting industry was discussed by representatives of jute and tufting manufacturers at a recent meeting at headquarters of the Tufted Textile Manufacturers Association in Dalton, Ga. Tufters explained their problems in tufting, dyeing and finishing and detailed the qualities and limits of variations they felt were necessary in jute backing for tufting and for "second-backings."

Jute representatives in turn explained conditions encountered in spinning and weaving jute, and steps being taken by their mills to meet the needs of the tufting industry. While there has been recent improvements in jute rug backing, tufters pointed out that patterned carpets call for higher standards.



WITHSTANDS HI-SPEED PRESSURE OF SYNTHETIC YARNS WITHOUT WEAR OR DAMAGE



FRONT
TBU-2A



BACK
TBU-2A



CUT-A-WAY VIEW SHOWING SMOOTH RADIUS OVER WHICH YARN TRAVELS.

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Southern Representatives: R. L. Carroll, P. O. Box 1676.
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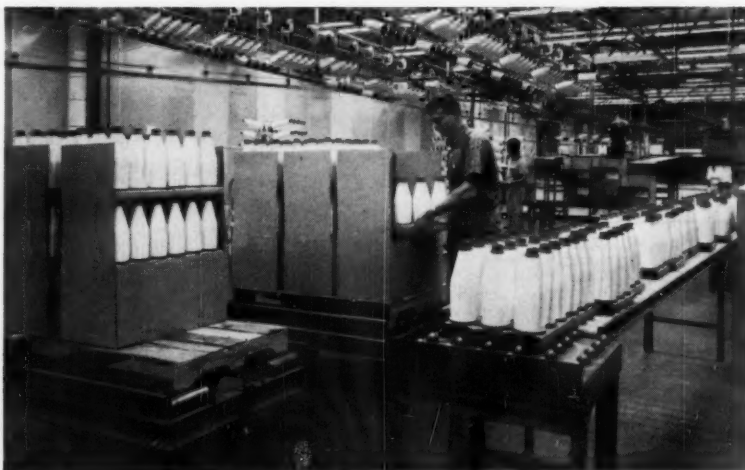
New Glass Yarns Plant

Initial operations have been started by Owens-Corning Fiberglas Corp. at its new textile yarns manufacturing plant at Aiken, S.C. Located on a 350-acre site, the plant will have a capacity of 70 million pounds of glass fiber annually. Key personnel at the new facility includes: Richard MacPherson, plant manager; Eugene M. Lockhart, production manager; John F. Coplin, operations planning manager; L. J. Shafer, plant engineering manager; Douglas E. Potter, technical control manager, and Bonner Manly, personnel di-

rector. Jerry B. Holschlag is project engineer.

Acquire Aligner Plant

Birch Brothers Inc., has purchased the patents and all rights to manufacture and sell the Bachmann Uxbridge automatic tacking aligner from the Bachmann Uxbridge Worsted Co., division of Hoosac Mills Corp. Birch Brothers plans to continue supplying this equipment to the trade in addition to its standard tacking range. The firm will maintain parts and service facilities for the automatic aligners.



Packing glass yarn at Owens-Corning's new plant



LOOKING
FOR
THAT

VITAL
DIFFERENCE

in your upcoming fabrics?

You may already have it. You do—if it contains VYCRON polyester, America's most advanced self-care fiber by Beaunit Mills, Inc.

What makes Vycron different? VITEL — the outstanding polyester resin by Goodyear. VYCRON or any fiber spun from VITEL offers remarkable yarn strength, exceptional dyeability

and color-fastness, excellent resistance to pilling, unusual affinity for dyestuffs, plus a unique softness.

To put selling vitality into your line, investigate VYCRON and VITEL. The facts are yours when you write Goodyear, Chemical Division, Dept. B-9476, Akron 16, Ohio. Lots of good things come from Goodyear.

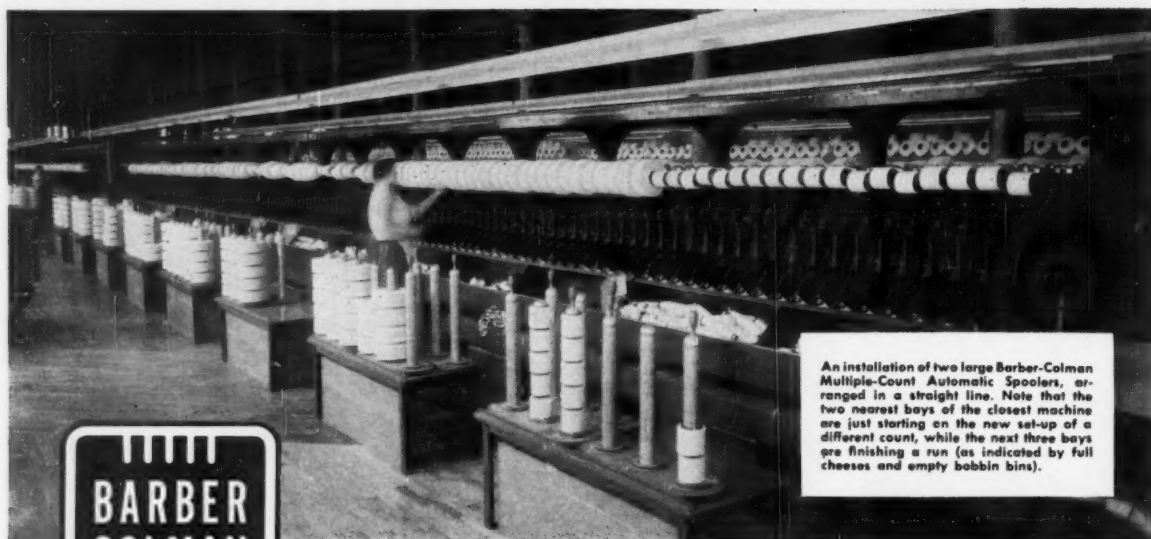
Vitel by **GOOD YEAR**

Northcool suit by Sagner of Vycott, a blend of 65% Vycron polyester fiber and 35% cotton, by Spenco Fabrics Inc.

Other fabric shown by Wamsutta Mills, division of M. Lowenstein & Sons, Inc., New York, N. Y.

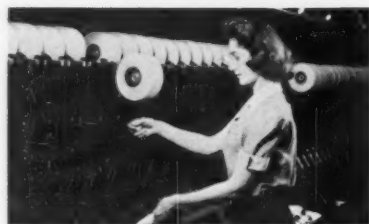
Northcool — T. M. Sagner Inc., Frederick, Md.; Vycron — T. M. Beaunit Mills, Inc. Fibers Division, N. Y., N. Y.; Vitel — T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

FEBRUARY, 1961



An installation of two large Barber-Colman Multiple-Count Automatic Spoolers, arranged in a straight line. Note that the two nearest bays of the closest machine are just starting on the new set-up of a different count, while the next three bays are finishing a run (as indicated by full cheeses and empty bobbin bins).

Multiple-Count Automatic Spooler



Spooler tender loading a full bobbin into the Spooler. The bobbin is dropped into a "pocket," and the yarn end is slipped into a spring clamp which positions it properly for the knitter to pick up.

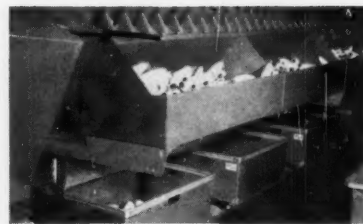


Yarn man moving a trident of full cheeses from operator's table to a creel truck. He also returns tridents of starters, removes boxes of empty bobbins, and keeps full-bobbin bins supplied. Boxes under operator's tables are for tailings, and cheeses to be rewound.

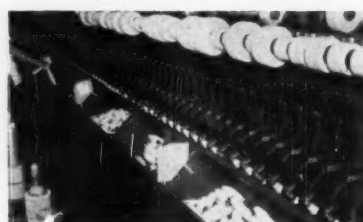
Sale yarn mills and producers of piece goods that use various counts or different mixtures will find that this machine can be a very profitable investment. It is still the famous and the very familiar Barber-Colman Automatic Spooler, but with this difference: now you can wind . . .

A DIFFERENT COUNT EVERY NINE UNITS

The machine is built in "bays" between uprights that support the traveler track, with nine bobbin-to-cheese winding units on each side of each bay. Empty bobbins, instead of being conveyed to a single sorting table, drop into separate boxes under each bay, thus enabling each group of nine units to be used for a different yarn count. Individual operator tables service each bay. The only limitation is that the extremes of different counts on the machine at any one time must fall within the range of the knitter in the traveler. Yarn or count changes can, of course, be readily made at any time, and any number of bays can be run on identical yarns.



A close-up of the full-bobbin supply bins which are fixed to the machine, one bin for each nine winding units. The removable empty-bobbin boxes are shown on the floor below, also arranged so there is one box for each nine units. Note box location guides.



A close-up of several full-bobbin bins showing how dividers can be used to mark off separate runs. Labels tell contents.

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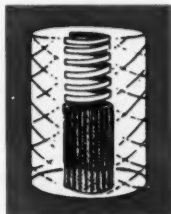


If your cones are not properly wound; if your yarn is not properly softened, you lose money at the knitting machine.

With a half century of experience in serving the knitting industry, with unequalled yarn dyeing and winding capacity, and with a superior technical staff, we can assure you of properly wound cones and of yarns softened with our special knitting finish.

And don't overlook the quality of Franklin Dyeing. Wound on Franklin Springs exclusively, our dye packages are compressible. Soft packages compress more and hard packages compress less into a column of uniform density. Uniform penetration of dye liquor and uniform shades consistently follow.

Our representative is at your service. Contact our nearest plant or office and ask him to call.



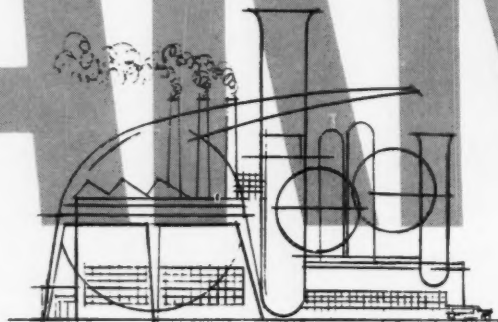
X-ray view of Franklin Package—the "secret" of uniform shades. Don't say "package dyed". Say... "FRANKLIN COLORBRED"

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COMPANY

Largest Package Dyers in the World of Natural and Synthetic Fibre Spun Yarns

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Yarns for industrial belting

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VYCRON staple for non-woven fabrics, carpeting, filters

POLYPROPYLENE FIBER:

Fiber for cordage, carpeting, filters

For specifications on any of the Beaunit Industrial Yarns or Fibers, contact us immediately.

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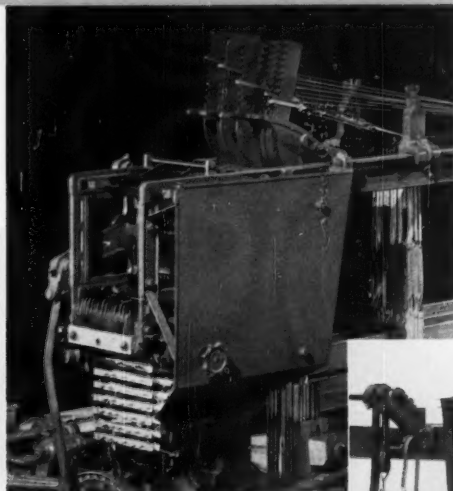
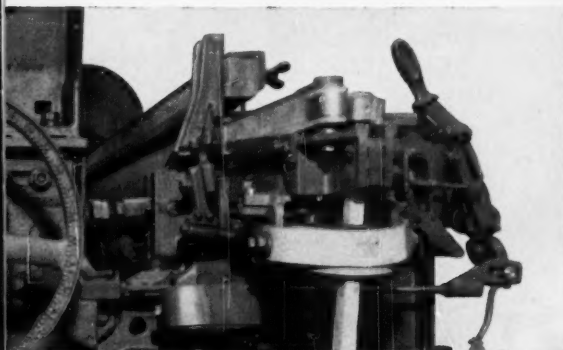
*Registration applied for. Beaunit Mills, Inc., Fibers Division
VYCRON is spun from VITEL®, Goodyear polyester resin.

†Certification mark of TYREX inc.

X-3

a new dimension in weaving

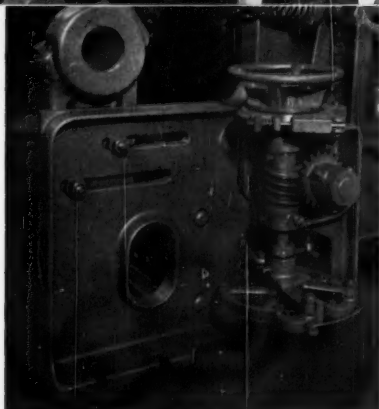
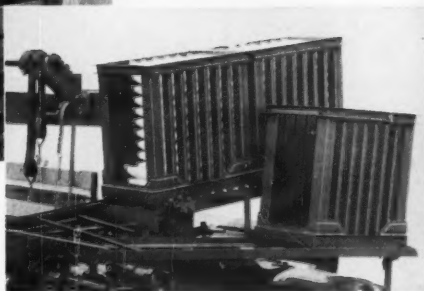
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New strengthened Dobby
— 16 harnesses, 15/32 Gauge or
— 20 harnesses, 3/8 Gauge
Clock Spring up to 6 harnesses

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Bartlett
Tru-Tension
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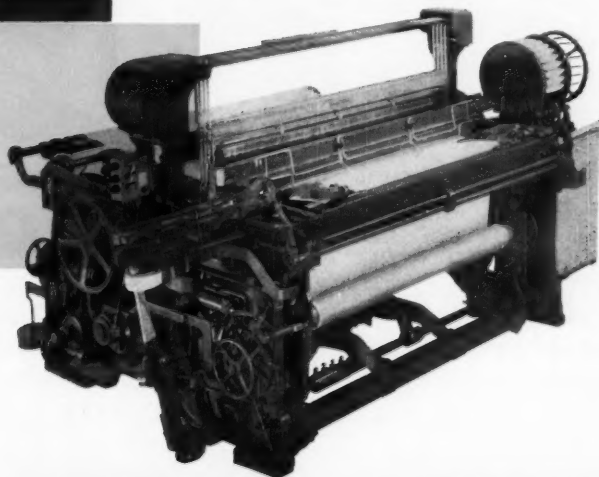
The X-3 Model Loom is designed to weave all of the fabrics normally woven on the X-2 and most synthetic fabrics commonly woven on the XD. This loom provides *greater versatility, increased speed, higher quality goods, and lower weave room costs.*

A weight increase of over 500 pounds in frame and shafting*, contributes to added stability, reduces vibration, and permits higher speeds regardless of fabric being woven.

*As compared with a Draper X-2 Model Loom

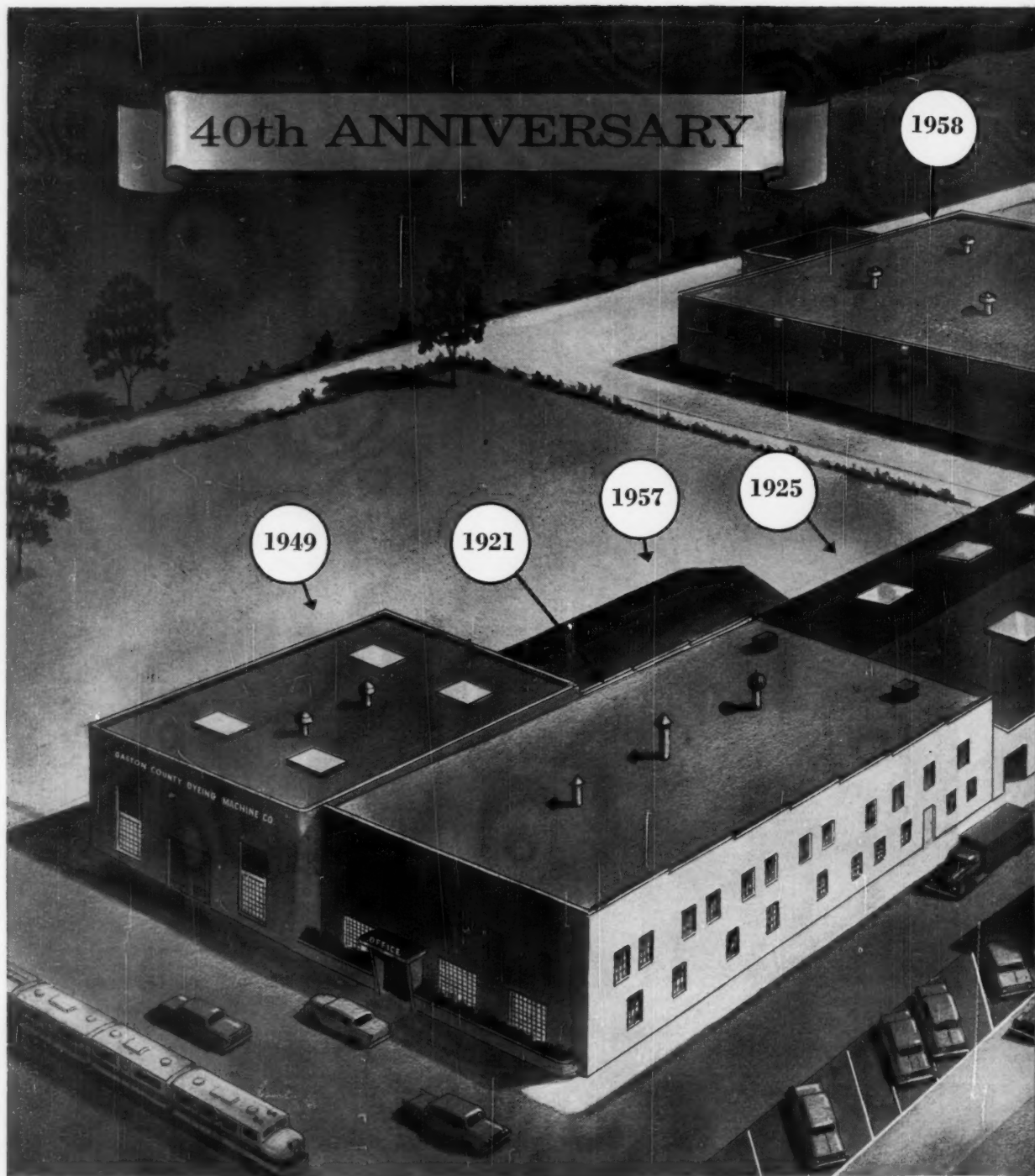
IMPROVED TAKE-UPS

to weave a complete range of
Cotton and Synthetic fabrics.



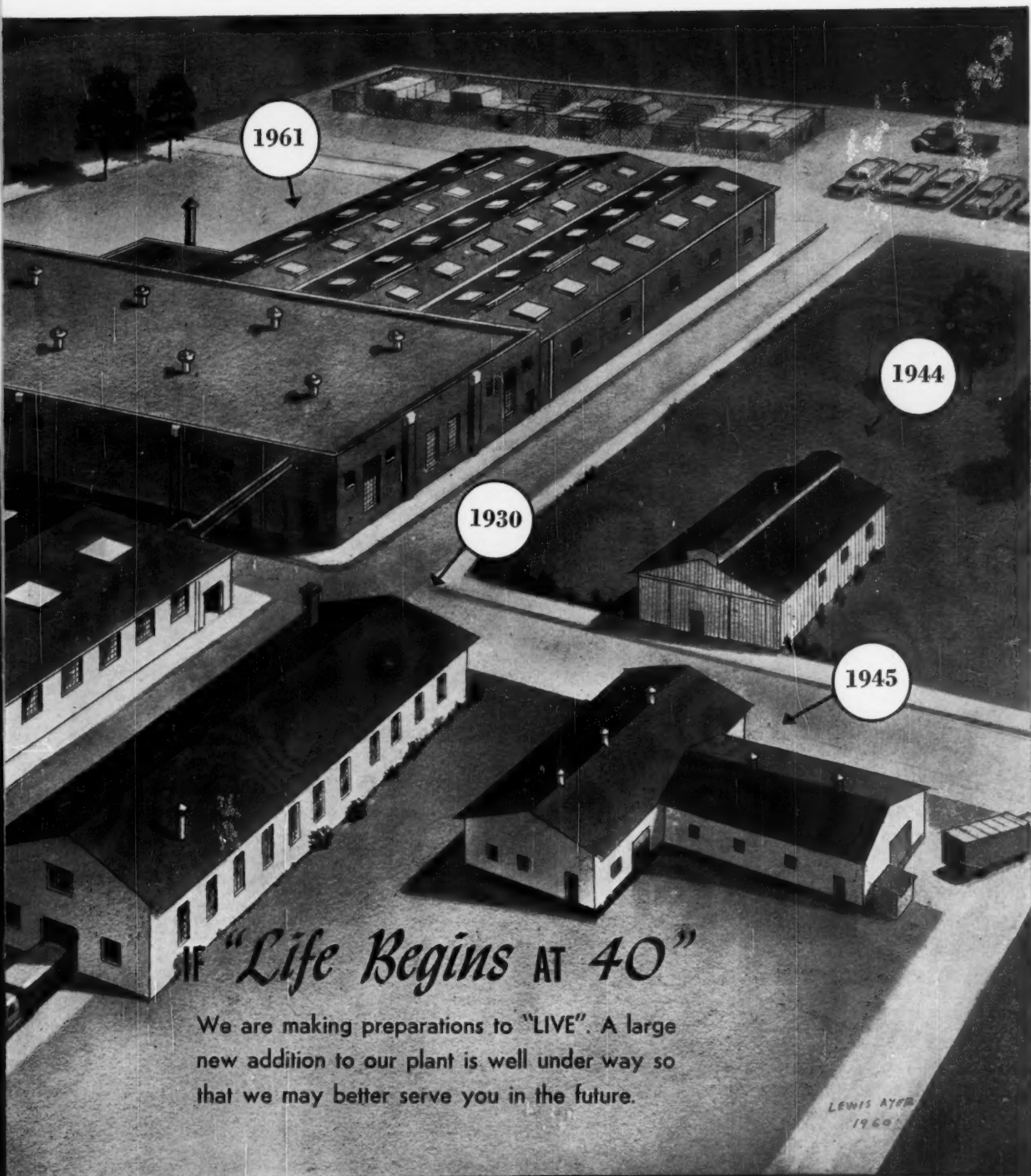
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To our friends in the textile and chemical industries we express our sincere appreciation for your confidence during the past 40 years and we begin our 5th decade of service by saying simply and humbly—THANK YOU.

With our machinery operating throughout the United States and Canada as well as 15 other countries, we re-new our pledge to continue to build the best wet processing equipment that can be devised by human ingenuity and experience.



IF *"Life Begins AT 40"*

We are making preparations to "LIVE". A large new addition to our plant is well under way so that we may better serve you in the future.

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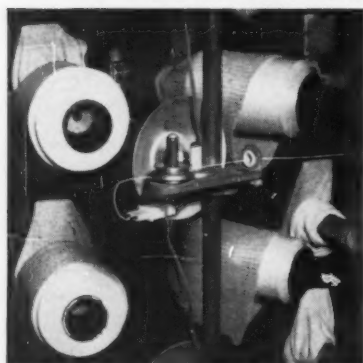
The Rudel Machinery Co., Ltd.
614 St. James Street, W., Montreal
260 Fleet St., E., Toronto

"No more tight ends in our warps"

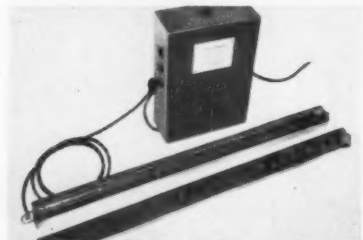


Photo of Yarn Inspector. Electrotense and Static Eliminator at Wm. Skinner & Sons

The LINDLY Electronic Triumvirate Gets the Credit YARN INSPECTOR - ELECTROTENSE - STATIC ELIMINATOR



Closeup of Electrotense in creel.



Lance Static Eliminator — not visible in installation photo.

When we asked William Skinner & Sons, Holyoke, Mass. for a report on their installation of a Lindly Automatic Warp Yarn Inspector, the Lindly Electrotense in their creel and a Lindly Static Eliminator, their answer was prompt and enthusiastic: "No more tight ends in our warps."

However, when we asked them to go back temporarily to warping without the Lindly controls, so we could get some comparative "before" data, they flatly refused. "Why should we go through that again, when we don't have to?" they asked, and we can't blame them.

Since Skinner didn't need comparative data to prove the value of the Lindly Electronic Triumvirate, we doubt if you would either. So why not try an installation? Here's what the triumvirate is and does:

THE LINDLY AUTOMATIC YARN INSPECTOR is a high-speed, ultra sensitive photo-electric instrument for detecting yarn defects in warps, such as broken filaments, strip-backs and fluff balls. It can be made to operate a counter, a signalling device, or to actuate a machine stop switch—singly or in combination for any degree of imperfection.

THE LINDLY ELECTROTENSE for warp creels, winders, twisters, knitting machines, etc. provides completely uniform tension for any number of ends and the tension for all ends can be varied by turning only **one** dial. It consists of two conventional discs with an electromagnetic coil beneath. The lower disc is of non-magnetic brass, while the upper disc is of magnetic iron. When the coil is energized through a central electronic control, the upper disc is attracted downward, pressing the yarn between it and the lower disc in any degree desired. The pressure is pulsating, which prevents backup of twist and helps keep the tension discs clean and free turning.

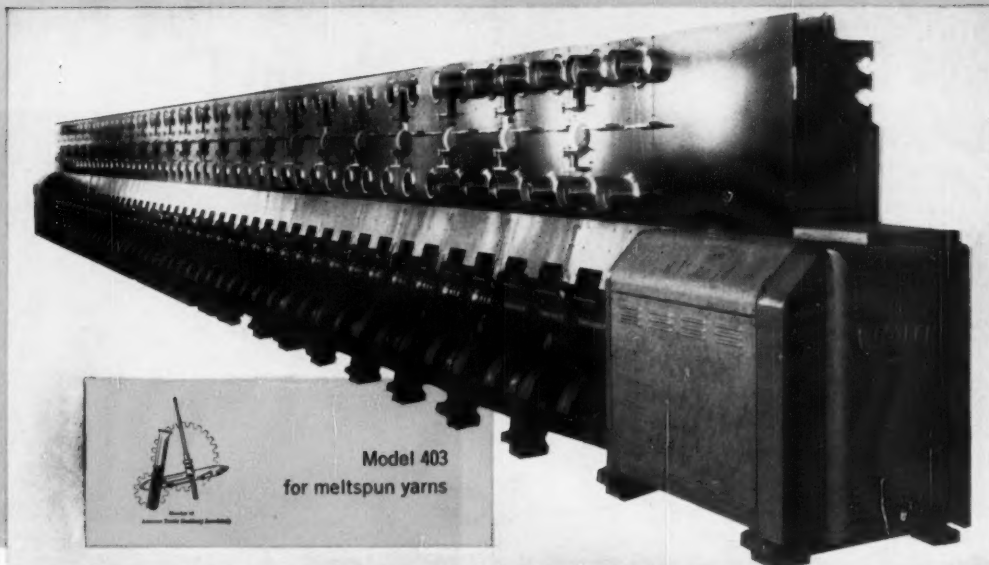
LANCE STATIC ELIMINATOR, made in a variety of models, has a textile application wherever static electricity is a problem. It carries a high voltage discharge from pointed electrodes into the air, causing the fibre to be surrounded by ionized air, which serves to discharge the static electricity accumulated all around the surface of the fibre. Whereas the voltage is high enough to ionize effectively the air, it cannot harm the operator, who accidentally comes in contact with the electrodes.

Write us for more information about "eliminating tight ends in your synthetic fibre warps." No obligations.

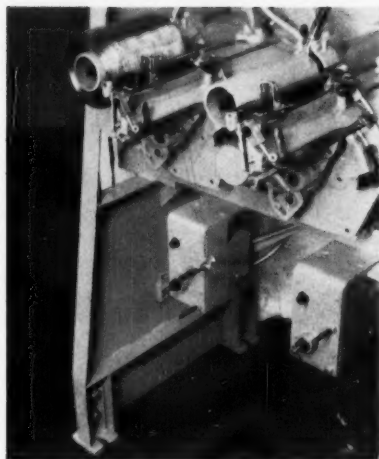
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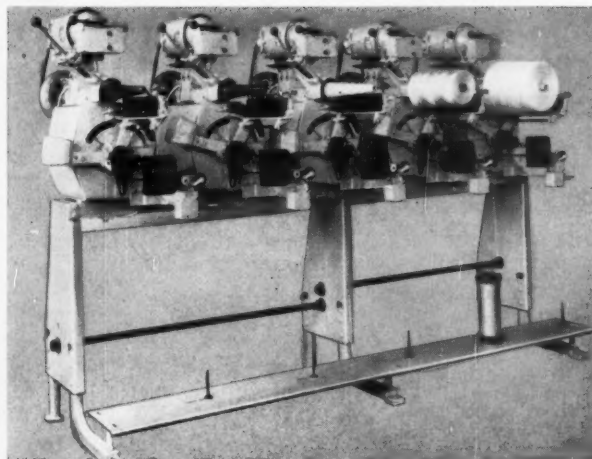
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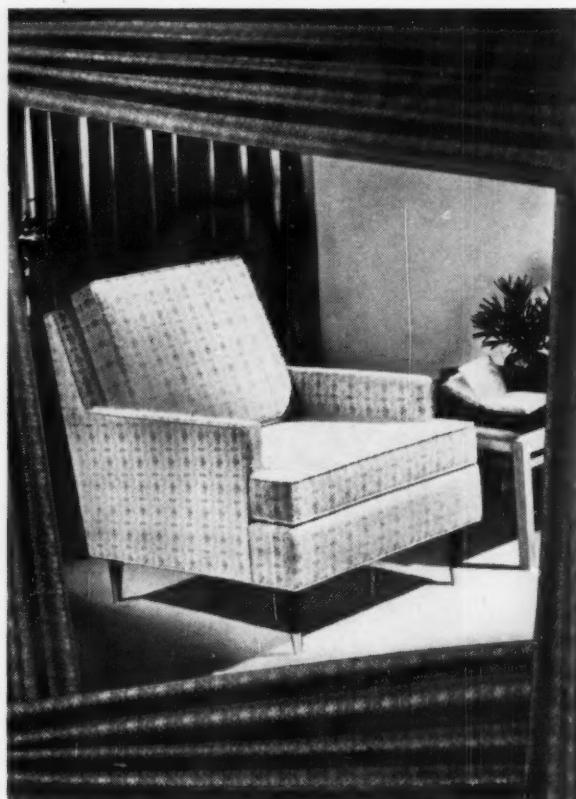
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MODERN TEXTILES

Magazine

Publisher's Viewpoint

A concrete proposal for action on imports

ON MANY OCCASIONS we have expressed our deep concern over the harm being inflicted upon the American fabric manufacturing industry by the rising tide of imports of textile products from low-wage countries. We have supported those in our industry who have urged the fixing of quotas as the only workable and equitable defense against an unreasonable volume of such imports.

The point of view we have advocated has been given powerful utterance by many leaders of our industry, we are glad to say. At no time have the arguments for adequate protection of our American textile industry been voiced more persuasively and convincingly than in a speech last month by Jackson E. Spears vice president of Burlington Industries, acting in his capacity as chairman of the Foreign Trade Committee of the American Cotton Manufacturers Institute.

In his talk, Spears first brought home with convincing vigor and clarity the desperate urgency of the import crisis facing American textiles. "Imports of textiles", he said, "amounted to 642 million square yards in 1958; in 1959 the figure had risen to 1 billion 32 million; for 1960 it was probably about 1 billion 536 million". He particularly stressed the rise in "imports from Hong Kong—from 61 million square yards in 1958 to an estimated 296 million in 1960". He noted, too, "that the largest foreign source of cotton goods for Hong Kong is Mainland China which supplies about 125 million square yards a year".

Quotas Are the Remedy

But the crux of Spears' talk was the clear-cut recommendations he made as to *what must be done* to stop the flow of low-wage textiles. He called for a "sensible system of import quotas". Such a plan will allow foreign producers a reasonable portion of this market and, at the same time, curtail the "devastating competition" now "draining the blood of the U.S. textile and apparel industry".

"We want quantitative controls on the importation of textiles and textile products", Spears said. "We want country-by-country quotas by category so that importers and domestic manufacturers alike will know the share of the American market available". All this, he said, should be accomplished "by appropriate administrative action under the laws now on the books".

Turning to the question, equally important, of a more permanent solution, Spears said that the

American textile industry wants Congress "to spell out a textile import quota law". "To accomplish this", he said, "the industry needs the help of all legislators concerned". "That is why", he said, "there is so much work to do and that is why we must all cooperate under common leadership with singleness of purpose".

A New Altitude in Washington?

Spears also noted the possibility, with the new Kennedy administration in Washington, of a more sympathetic attitude toward the import problems of the textile industry in the executive branch of the Federal Government. He said that leaders of the ACMI were much encouraged last September by a letter written by President (then presidential candidate) Kennedy to Governor Hollings of South Carolina. Kennedy said in part: "The office of the Presidency carries with it the authority and influence to explore and work out solutions within the framework of our foreign trade policies for the problems peculiar to our textile and apparel industry. I can assure you that the next Democratic administration will regard this as a high priority objective . . . I assure you that should further authority be necessary to enable the President to carry out these objectives, I shall request such authorization from Congress".

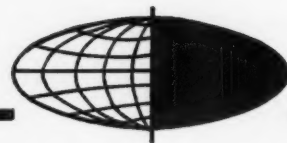
A Great Step Forward

It is our earnest hope, which we share with Mr. Spears, that the new administration will move promptly and vigorously to implement President Kennedy's pledge. We agree with Mr. Spears, however, that "we must redouble our own efforts to inform the proper people in Washington of the urgent necessity for finding long-range solutions." We agree with him also that this job "can be done most effectively if all segments of the textile industry coordinate their efforts."

We regard the concrete and forthright proposals of Jackson E. Spears, speaking as he did for the largest and most influential textile trade group, as a great step forward. For what has been lacking in the past in much of the efforts directed toward obtaining relief from low-wage imports has been just such a courageous and clear-cut proposal as that voiced by Mr. Spears. Let us hope that his proposal will at long last signal the beginning of real action that will lead to the badly needed solution to the problem of low wage imports from abroad.

A. J. McCallough

TEXTILE NEWS



World Wide

WEST EUROPE'S TEXTILE industries, which experienced a "very good" year in 1960, should see the favorable level of production continue "well into the first half of 1961." This was the conclusion of the Organization for European Economic Cooperation's latest, comprehensive textile report. OEEC believed that official 1960 figures would show a rise over the previous peak year, 1957.

CLOUD ON HORIZON, however, could be the split between the six Common Market nations (France, Germany, Italy, Belgium, Holland, Luxembourg) and the seven European Free Trade Area states (Britain, Switzerland, Portugal, Austria, Norway, Sweden, Denmark). The recent trend toward common production and price patterns throughout the OEEC area "could be jeopardized by the contemplated intra-European discrimination," it was said.

SYNTHETIC FIBER OUTPUT in Western Europe last year again accelerated following the 40% jump in 1959 when it totaled 146,000 metric tons. Since synthetic fiber stocks are minimal, OEEC went on, production rises reveal "an equivalent rise in real consumption."

BRITAIN'S STRIPPED-DOWN cotton industry will be "more compact, efficient and up-to-date," OEEC stated. The group's evaluation of the United Kingdom's 79 to 93 million pound sterling modernization project is one of the first to be offered from outside the U.K. itself.

BRITISH SPINNERS TURN increasingly to manmade fiber tops. Nearly 15% of the country's output of manmade fiber tops are being absorbed by worsted mills as more and more topmakers get on the synthetic bandwagon. In the first half of 1960, worsted spinners in the U.K. used 67% more manmade fiber tops than a year earlier. The six-month '60 total was 14.7 million pounds.

GERMANY'S WOOL TRADE is going through a similar switchover. Demand for lighter fabrics—and consequent growing need for manmade fibers—has brought a downgrading of wools to the advantage of worsteds. Wools used to account for two-thirds of Germany's wool yarn output; this has been cut to half.

HOLLAND'S AKU JOINS with Pittsburgh Plate Glass to construct a fiber glass factory somewhere in the Netherlands. Operations will start in 1962. Fiber glass yarn and roving would go to textile, electrical, paper and plastic makers.

JAPANESE STRESS TRIACETATE fiber research in a drive for richer, more lustrous cloth that can also be ironed at higher temperatures than traditional acetate textiles. Celanese's Arnel is regarded highly in Japan, particularly as a blend with other fibers. Mitsubishi Rayon, half owned by Celanese, is said to be considering triacetate output but will work with imports initially.

SWISS HELANCA LICENSES were granted seven Argentine companies. Licensor is Heberlein of Wattwil. The Argentine firms are Fadete, Fisuar, Galfione, Hilteca, Himalaya Roccatagliata, La Lanera San Blas, and Romder.

BELGIUM'S NEW FABELTA operation at Zwijnaerde, near the Port of Ghent, will shortly begin producing Z54, a polynosic fiber developed in association with Swiss firms from Japanese basic patents. Fabelta is also set to turn out acrylic fibers at the new Zwijnaerde installations.

FRENCH MILLS COMPLAIN about competition from low-wage foreign imports, State-trade competitors and countries operating with multiple exchange rates. Robert Trocme, president of the French Textile Union, urged a West Europe quota system to cope with such inequalities.

HONG KONG OPPOSES new export curbs on cotton cloth shipments to the United Kingdom. The Crown Colony's Cotton Spinners' Association and the Federation of Hong Kong Cotton Weavers, which together make 90% of the cloth going to the U.K., said the past three-year export curbs had not reduced imports to Lancashire because the U.K. took more goods from such non-Commonwealth countries as Spain, Portugal and Egypt. Discussions with Britain are underway for renewal of the 1958-60 export restrictions.

RUSSIA PUSHES TEXTILE ties with non-Communist countries. Talks have occurred in Moscow with Britain's Imperial Chemical Industries for ICI to trade its polyethylene know-how for Russia's caprolactam processes for nylon 6. ICI would get exclusive export rights—including sales to the United States. The Soviets have also signed a 1961 trade pact, effective in April, with Japan. Russia will get textile machinery, rayon filament yarns, staple and high tenacity yarns and fabrics in exchange for flax, goat hair and raw cotton.

ARGENTINE TEXTILE WORKERS get wage boosts. As a result of the Government's modernization plans for the textile trade, workers were granted a 17% wage rise.



The Story of Marvin Cross, textile merchant

"EXPOSE YOURSELF TO OPPORTUNITY"

By Jerome Campbell,
EDITOR, MODERN TEXTILES MAGAZINE

IT IS THE GREAT and challenging responsibility of Marvin R. Cross, as president of Greenwood Mills' sales organization, to find buyers for the tremendous output of this huge fabric producer whose mills in South Carolina are among the most modern and productive in the United States. And it is a measure of the success with which he has so amply fulfilled his assignment that Greenwood today is regarded as one of the most successful and profitable of the country's makers of cloth.

Standing high among the first ten textile manufacturers in point of looms and spindles and dollar volume, Greenwood is still growing. It has just brought into production its Sloan plant, a brand new, fully integrated gray goods mill for the production of combed cotton fabrics in Ninety-Six, not far from the company's home base of Greenwood, S. C.

To the task of finding customers for Greenwood's huge yardage, Marvin Cross applies, to use his own

favorite analogy, the approach of a Tiffany salesman selling diamonds. In a word, the emphasis, in the Cross approach to selling cloth, is always on the quality of the product. A lifetime of fruitful experience in the New York textile market has taught him that anyone can book volume orders on price alone, but that such a method of getting business leads, more often sooner than later, to disaster.

His philosophy of selling quality along with service makes Marvin Cross a textile merchant of the old school, the breed of men who over the decades made the words "Worth Street" synonymous with business integrity and a high level of prosperity, taking the good years with the bad, for the American textile industry over decades and decades of activity.

Like most of the textile selling industry, Marvin Cross has moved uptown away from Worth Street, but he still carries on the old standards, the standards he learned in his youth when he started on Worth

(Continued on Page 46)

WOVEN STRETCH FABRICS—

a new frontier in textiles ?

By Prentice M. Thomas
PRENT THOMAS TEXTILE CONSULTANTS

THE U. S. TEXTILE MARKET is poised for what may well be a surging breakthrough of woven stretch fabrics. In the next two to five years, demand for these new fabrics may vitally affect manufacturing and finishing techniques, garment manufacturing, and buying practices of department stores.

"It's like sitting on a keg of gunpowder with a lighted match," a New York converter said. "If woven stretch fabrics hit the market right and are handled right, they could go right up through the roof."

Weaving mills and fiber producers are of the same opinion. "It looks big," a leading fiber producer said. "We don't see how it can miss." "... The coming thing is woven fabrics," a South Carolina cotton mill said.

So, far, the U. S. market has seen woven stretch fabrics only from Europe and a couple of U. S. experimenting mills. But estimates are that about 25 mills are now at work on a sample-weaving basis. Nearly all converters are experimenting and day-dreaming.

Two major U. S. machinery manufacturers are supplying stretch yarn machines, four major fiber producers are helping nurse the fabrics along, and finishers are working out new processing techniques and training personnel in handling the new fabrics.

What are woven stretch fabrics?

Called variously "textured yarn fabrics," "Uni-directional stretch fabrics," and plain "woven stretch fabrics," these fabrics are woven with false-twist textured manmade yarns or conventional Helanca nylon yarns. At present, most of them are woven of standard warps, usually cotton, and stretch filling, nearly always textured continuous filament nylon.

They offer endless variety of constructions. Stretch can be controlled to almost any amount. The fabrics can have stretch filling, stretch warp, or both. Fabric construction can be for anything from a sheer blouse to heavy sportswear.

The fabrics at present are at a slight premium, compared to all-cotton fabrics. Nylon yarn itself is more expensive than cotton, and texturing the yarn adds cost. Manufacturing and finishing costs are higher than for all-cotton fabrics. But some of these costs may be offset in garments because garment manufacturers and retailers may be able to reduce drastically the number of different sizes of garments made and carried in stock. Some costs may be offset

by longer life and added functionalism as in the case of stretch socks.

Experienced market observers see woven stretch fabrics right now at the same stage of stretch socks and seamless hosiery immediately before the market stampeded in those directions.

That's why mills are now eagerly seeking technical know-how and converters are trying every fabric idea that comes along. The problems are many, but nearly everybody seems afraid not to try to solve them. As one big mill put it, "You never know. Three years from now even work clothes may be made of stretch fabrics. Why not?"

The immediate prospects in the U. S. market are best for sportswear. Nearly everybody concerned with stretch fabrics thinks specifically that women's slacks and sports jackets will be the first big uses of stretch fabrics. Then men's sportswear will follow.

Last year there was an excellent market for tights, called leotards by the stylists, knitted of stretch yarns. With the new woven stretch techniques, weavers and converters see no reason why such garments cannot be made with woven stretch fabrics.

Another use eyed frequently is ski suits made of woven stretch fabrics, successful last year in Europe and this year in both Europe and the U. S.

In the current winter issues of the magazine Skiing, numerous garment suppliers are advertising ski clothing made of these fabrics. From that use and from leotards, it is only a small step to the much vaster market of slacks, snow suits, play suits, and similar outerwear.

But already mills are either experimenting with or weaving small quantities of fabrics for such uses as dresses, blouses, shirts, and pajamas.

One of the greatest advantages of woven stretch fabrics is the variations that can be obtained in finishing. It is possible for a mill to weave basic stretch fabrics and vary the finishing techniques to obtain a whole range of finished hands. As the technology and market uses now stand in the U. S., it is almost certain that for the next year, and possibly the next two years, the big volume of woven stretch fabrics will be in cotton warps and stretch filling. These fabrics are much easier to weave and finish than warp-stretch fabrics, and the end cost is less. But the market almost certainly will later move on into warp-stretch fabrics and two-way-stretch fabrics.

Roberts' New Plant Under Way

Engineering studies have been completed by Roberts Co., textile machinery manufacturer, for its new, consolidated plant and offices to be built on a 54 acre site in Sanford, N. C. Early 1961 has been selected as the target date for breaking ground for the first 105,000 square feet of what ultimately will be a 360,000 square feet building. Completion of this first phase is expected late this spring at which time Roberts will begin making there its Arrow spinning machines and related machinery.

At present, Roberts' facilities are located in 7 buildings in Sanford. According to Robert E. Pomeranz, president, the consolidation and expansion will permit direct savings in manufacturing costs by combining many operations under one roof.

The first phase of the new plant will consist of 85,636 square feet of manufacturing space and 20,000 square feet of office space. It will be completely air conditioned, have fluorescent lighting, and be serviced by a 100,000 gallon elevated water tank, a complete fire protection system and the latest in power wiring.

DYEING and FINISHING SECTION

FINISHING MAGIC

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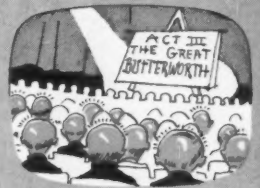
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at high speeds



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and low cost



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**With Butterworth
Finishing Machines**



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**you get high
lustres**



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**... embossed
effects**



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**... add the
excitement of**



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**colors in limit-
less shades**



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**... crease
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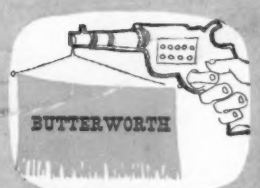
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SCHREINER CALENDERING of nylon lace

By **Graham M. Richardson & George M. LeClerc**
TEXTILE FIBERS DEPT., THE DU PONT CO.

SCHREINER CALENDERING was introduced to the nylon tricot industry about three years ago. It has created entirely new tricot fabrics to add to other basic jersey fabrics which had been produced for over a decade prior to 1957 with only minor variations. Lightweight fabrics now are made which have the opacity and covering power of much heavier fabrics. These new fabrics have provided interesting aesthetics and additional styling opportunities, and have helped to increase tricot sales. The success of Schreiner calendering naturally has led to interest in its application to other fabrics made from thermoplastic fibers, such as broadweaves, power knits, simplex fabric, and lace.

Lace calendering offers many of the advantages that are found in calendered tricot and which increase the customer appeal. Calendered lace has more covering power (this means less "see-through"). It reflects more light, which causes it to look whiter. These effects are obtained through the permanent spreading of the filaments in the yarn bundle. In most cases, calendering of finished lace which normally contains resin will soften the goods considerably, and rough spots which are caused by yarn crossovers are flattened. Softness and smoothness contribute to improved aesthetics in dresses and blouses and should contribute to decreased snagging of stockings when used as trimming in lingerie.

Improved economics also are possible. The increased opacity and reflectance of calendered lace will cause a lean lace to look like a much heavier fabric. Normally two methods are used to achieve this effect—namely, using more or heavier yarns and

using textured yarns. Both of these methods can be expensive, while calendering offers a lower cost route to a similar result.

Both Leavers and raschel laces benefit by calendering. The effect on Raschel lace is more dramatic, but calendering also is effective in the Leavers lace. Even laces which contain textured yarns for added cover and fullness of detail are noticeably improved. Some typical properties of samples of finished lace which have been Schreiner calendered in the Du Pont laboratory are summarized in Table I. The data can only be regarded as approximate because of the irregularities in lace patterns and the vast differences between patterns; however, they serve to show relative differences between calendered and uncalendered samples.

The effects of Schreiner calendering not only increase the consumer appeal, but also improve durability. Samples of all-nylon and nylon-acetate laces retain the effects of calendering after five 10-minute machine washings.

The conditions for calendering all-nylon lace are substantially the same as those which are recommended for nylon tricot. Temperatures of 400 to 425 degrees F. at speeds of 15 to 20 yards per minute are recommended to obtain durable effects with the calender. The pressure may be varied according to the degree of flattening desired. The pressure preferably should not be below 0.5 ton per inch of calender width and may be increased to a maximum of one ton per inch, obtainable on most machines. Since yarns of bright luster and large deniers generally are

(Continued on Page 26)

TABLE I
PROPERTIES OF SCHREINER CALENDERED LACE

All values represent data from several patterns.
Data on control and test items were measured at the same place in the pattern.

Type	Calendering Conditions	Reflected Light*	Transmitted Light**	Thickness (mils)***
Leavers (all nylon)	uncalendered	60-61%	20-27%	18-20
	calendered (0.5 ton/in.)	64-67%	16-25%	16-17
	calendered (1.0 ton/in.)	68-71%	14-22%	14-15
Raschel (nylon/acetate)	uncalendered	46-59%	29-35%	12
	calendered (0.5 ton/in.)	51-63%	19-25%	10
	calendered (1.0 ton/in.)	54-69%	17-22%	9
Raschel (nylon/rayon)	uncalendered	55-61%	22-31%	22
	calendered (1.0 ton/in.)	60-67%	12-18%	14

* Du Pont TSL Method #A-2058

** Du Pont TSL Method #A-2054

*** A.S.T.M. thickness test (3.4 psi)

Light Navy *

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In step with this trend, Eastman offers an expanding series of polyester dyes, providing the best all 'round fastness characteristics of polyester dyes currently available.

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Equally important are their excellent processing characteristics...good build-up, good exhaustion and outstanding leveling properties. Thus, darker shades of navy, brown and grey are economically obtained.

Dyeing with Eastman Polyester Dyes is easily accomplished with carriers or under pressure at elevated temperatures. Fibers can be readily dyed in tow, tops, stock, or fabric forms. Fabrics of polyester filament can be conveniently dyed in jigs. Fabrics woven of spun polyester yarns alone or blended with cotton, viscose or wool can be easily dyed in dye-becks.

Get the full story of this outstanding line of dyes for polyester fabrics from your Eastman representative.

Eastman Polyester Dyes

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* Try this formula on your next light navy lot.

4% Eastman Polyester Blue 3RL
4% Eastman Polyester Blue BLF
0.3% Eastman Polyester Orange 2RL
5 g./l. of a suitable carrier

Material: Polyester

Bath Ratio: 30:1

Dyed 1 hour at boil

Polyester Yellow RL
Polyester Yellow W
Polyester Yellow 5K
Polyester Red B
Polyester Red 2G
Polyester Dark Red FL
Polyester Pink RL
Polyester Pink LB
Polyester Brilliant Orange 2RL
Polyester Orange 3RLN
Polyester Blue GLF
Polyester Blue GR
Polyester Blue 3RL
Polyester Blue BLF
Polyester Blue GB
Polyester Navy G
Polyester Violet R
Polyester Black RB
Polyester Diazo Black B

Schreiner Calendering

(Continued from Page 24)

used for outlines and special effects, it is often advisable to calender with the fabric face against the composition roll instead of the steel roll. Otherwise, the embossing will tend to deluster these yarns, resulting in reduction of pattern detail. Laces containing acetate and rayon yarns may be run at 350 degrees F. at the above speeds without encountering melting or discoloration.

The calendering operation can be introduced into the finishing sequence in several ways. If it is desirable to achieve the body that is obtained with a resin, but with a softer hand, the goods should be calendered as the final step after heat setting and curing. This is the least expensive of the methods. However, if a firm hand is desired, the goods may be calendered after heat setting, followed by padding and drying or curing. An alternate to these methods might be to calender the lace directly after scouring, followed by padding and curing. This possibility has not been explored, and it is felt that perhaps width control would be a problem. However, this second possibility should not be overlooked.

The removal of draw threads in calendered band laces is not difficult. Normally, more tension must be applied to the draw thread than is customarily used, but most draw threads are of sufficient strength so that they can be removed easily.

Better Scouring of Synthetics

A method for improving the efficiency of synthetic fiber scouring in preparation for dyeing was explained recently by Joseph S. Panto, Senior Research Associate, Fabric Research Laboratories. Speaking at a meeting of the Niagara Frontier Section of the American Association of Textile Chemists and Colorists, it is well known, Panto noted, that a synthetic fiber must be void of all contaminants in order to accept dye properly and uniformly. Scouring, of course, is the method used to remove the contaminants.

The specific nature of the contaminants, however, and the time, temperature, and chemicals needed to remove them are frequently not well known, he said. By a precise definition of the problem it is often possible to establish scouring procedures considerably more efficient and less expensive than those being used. In other words, lacking a precise index of what must be removed many dyers are overscouring with a loss in time and money, and a degradation of fiber properties.

The most common contaminants fall into four classes: (1) anti-static agents which producers introduce in fiber extrusion; (2) the lubricants applied during yarn spinning; (3) sizes applied to the yarn for abrasion resistance during weaving; and (4) waxes which weavers sometimes apply to facilitate the weaving operation.

All of these substances can be identified by their ultraviolet reflectance curves, Panto said, and it is a relatively simple matter to put a special ultraviolet attachment on a standard spectrophotometer thereby permitting measurement of reflectance in the U. V. range. Most dyehouses use spectrophotometers for color measurement and consequently already have the basic equipment.

Defining the contaminants and measuring their presence during various stages of scouring and under various scouring conditions make it possible to establish scouring specifications minimizing the necessary

The question of the machine to do this job naturally, arises. Most all-over laces are much wider than even the 105 to 110-inch Schreiner calenders in use by the tricot industry. However, rather than going to the expense of a calender of perhaps 200-inch width, a narrower machine can be used. All-over styles can be cut or separated into strips of proper width, and band laces can be separated as desired. For those who use solution methods for the separation of band laces, this would require the use of draw threads from fibers other than acetate at the necessary intervals. Calenders of 60 to 72-inch width offer a large degree of flexibility and are more readily available, both new and used.

Processing lace on a Schreiner calender naturally has a pronounced effect on the composition roll, which makes the handling of other fabrics without refinishing the roll highly improbable. Such a machine should be used only for lace. The effect of the pattern which is repeatedly embossed on the composition roll does not appear on the lace because of the relative openness of the fabric. Wetting the composition roll on a regular basis will minimize this embossing.

Schreiner calendering of nylon and nylon-containing laces can be expected to create a great deal of interest in the near future because it offers a simple, relatively low-cost means of producing very attractive effects, such as increased covering power and smoothness, as well as a method for upgrading lighter laces at less expense than would be required if increased quantities of yarn were used.

time and maximizing the efficiency of the operation, according to Panto. He claimed that the costs of U.V. equipment and measurements are very small compared to the savings that may be realized, and that a skilled technician can easily perform the tests if experiments have been properly designed by a qualified chemist.

36,000th Calender Roll

H. W. Butterworth & Sons Co. recently celebrated the production of their 36,000th pressed roll for the textile trade. Butterworth roll-making experience goes back to 1885, according to Stanley Brooks, vice president of the firm which is now a division of Van Norman Industries, Inc.

In the construction of the rolls, the cotton is first cleaned and combed. From sheets of cotton, circles or "doughnuts" are cut to fit the shaft. The "doughnuts" are slipped onto the shaft a few at a time. When a small amount of cotton has been fed onto the shaft, the roll is placed vertically into a frame and tremendous pressure is applied. Hundreds of tons of pressure are used and the cotton is compressed for long periods of time, as much in some cases as 24 hours. This operation is repeated again, and again, until the entire width of the roll has been filled, the total length of time taking up to 20-25 days.

It would seem that enough cotton could be applied at one time to cover the entire width of the roll with a single pressure treatment. But this is not the case. In order to insure proper hardness and density, only small amounts of cotton can be compressed at a time. The face of the filled roll is rough and uneven after the pressure has been applied. A special grinding machine is required to "sand" the cotton to kid-glove smoothness. Butterworth uses a series of tests to insure hardness. As many as 120 readings are taken on each roll in several of the tests in the series. Other tests insure smoothness.

A new experimental technique

Spray "decoration" of fabrics

A NEW TECHNIQUE for applying patterns and textures to fabrics by production-line methods without the expense of engraving rolls or fabric-printing equipment, was demonstrated recently at North Carolina State College School of Textiles.

The process, developed by B. F. Goodrich Chemical Co., was demonstrated on production-scale spraying equipment donated by Binks Manufacturing Co. In the process, liquid vinyl plastic is sprayed on textiles in abstract swirls, random line or spatter designs. On heating in an oven, the vinyl fuses to the fabric in permanent patterns or textures that withstand washing and drycleaning. The fabric's hand remains virtually unaltered.

This process means that three-dimensional "printing" of textiles is possible, according to William A. Newell, director of the Textile Research Center at North Carolina State College.

Lawrence L. Shailer, manager of textile chemicals sales development for Goodrich, said that a great variety of fabrics including wovens, nonwovens and knitted materials, tight or loose construction, may be decorated by this method. "Patterns and colors are practically unlimited."

Fabrics prepared in this manner are now being considered for use in automobile interior trim, draperies and curtains, upholstery and slipcover materials, tickings, outerwear fabrics, lingerie, robes, gloves, spreads, lampshade fabrics and wall coverings, Shailer said.

Shailer said his firm supplies only the raw materials used in the process. He pointed out that the plastisols (vinyl plastic in the form of a liquid dispersion) used in the demonstration were prepared by Flexible Products Co. using Geon vinyl materials supplied by Goodrich.

With the Binks equipment installed at the college, patterns may be varied by adjusting the spray guns, altering the flow properties of the plastisol, and by

changing the number of spray heads, their position or the speed of the material through the equipment. Speeds up to 25 yards a minute were demonstrated, but much higher speeds can be attained if simple patterns are used and adequate oven capacity is available.

Patterns may also be varied by using equipment with moving guns. Such equipment might have the guns moving on a traversing unit or mounted on an oscillating frame. Vinyl or nitrile latex may be used in place of vinyl plastisols in the spraying operation. This is usually done when heat-sensitive fibers are being sprayed since latices can be cured at lower temperatures. When latices are used, they are simply dried and then heat cured usually at temperatures below 300 degrees F.

The advantages of vinyl plastisols are their low cost, wide color range, good aging properties and washfastness. Plastisols may also provide three-dimensional or raised patterns that are attractive to many designers. Wear resistance is substantially improved where three-dimensional patterns are used. Latices also display excellent durability but are more costly and their compounding is more complex. In addition, it is difficult to achieve three-dimensional patterns when latices are used.

Either hand or automatic spray guns equipped with decorator heads may be used for decorative spraying. The amount of material used varies with the design and averages 0.5 to 1 ounce per square yard of fabric. Usually the decorative spray technique can be integrated into existing printing and finishing operations without difficulty.

Decorative spraying equipment used in today's demonstration is now the property of The School of Textiles where it will be available to the textile industry for use in continued research on the decorative spraying technique. *For further information about this technique write the editors.*

HOW IT'S DONE—
These nozzles spray plastic on fabric to create spatter designs and other random effects. Technique is experimental, further studies are continuing.



Dyeing and Finishing Trends

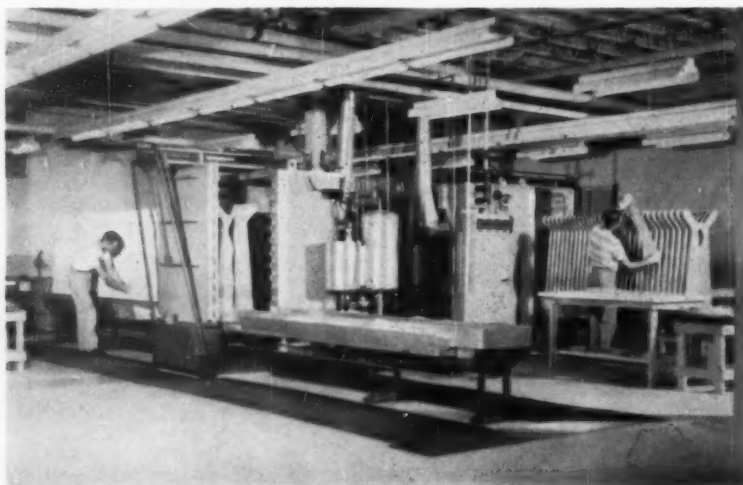
New Textile Surfactants

Antara Chemicals Division of General Aniline & Film Corp. has introduced a new series of surface active agents, tradenamed "Gafac" Surfactants. The initial application areas for the first items in the new line include cotton boil off and bleaching, wool scouring, and other uses in fabric preparation and finishing applications. The items in the new series are supplied as the 100% free acid or as a sodium salt.

Improved Dye Boarder

Turbo Machine Co. has announced a 15% to 20% increase in the efficiency of its Dye Boarder for hosiery dyeing and finishing, by shortening the processing cycle from 8½ minutes to as low as 7 minutes. Turbo also has moved to correlate machine capacity with the speed of the operators by recommending two operators, instead of one, per machine. With two operators, production is 160 to 170 dozen pairs in 8 hours, depending on type of hosiery. Formerly, with the 8½ minute processing cycle, one operator, Turbo reports, could not keep up with the machine capacity of 140 dozen pairs in 8 hours. Mill studies showed that production was averaging 80 to 90 dozen pairs in 8 hours.

The Turbo Dye Boarder combines the four operations of preboarding, dyeing, postboarding and drying, into one operation. With fewer dressing and stripping operations, the number of pulls and snags are reduced. The board uses 120 hosiery forms. Each operator strips and dresses 30 forms while the other 60 forms are in the cabinet being processed. For further information write the editors.



TURBO'S IMPROVED DYE BOARDER permits faster processing of hosiery at lower cost

New Stripping Assistant

Arkansas Co. has introduced a new stripping assistant for vat dyes which is said to be among the most efficient yet developed. Tradenamed Algepon X R, the product is said to be an outstanding advancement in Arkansas's group of Algepon stripping auxiliaries. According to the company, Algepon X R represents a breakthrough in efficiency that extends to vat dyes of the anthraquinone type, such as Vat Blue 6 and some of the Olive Greens used to produce Khaki shades, heretofore difficult to discharge to a satisfactory ground.

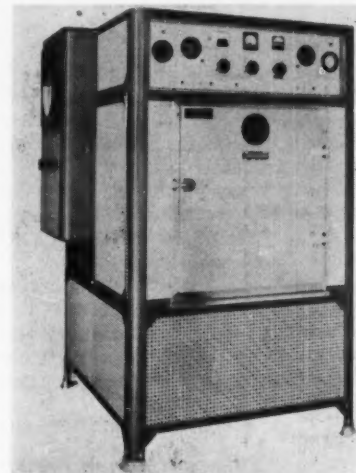
A spokesman for Arkansas states that, after the dye has been satisfactorily stripped, there is no tendency for the color to redevelop, under normal conditions. Algepon X R is said to be easy to use, involving only the addition to a conventional sodium hydro sulfite and caustic soda bath. It is also said to possess excellent storage properties. A technical service bulletin on the properties and application of Algepon X R is available by writing Arkansas Co., P.O. Box 210 Newark 1, N. J., or from the company's technical service representatives.

Dyed Latex Backings

Latex backings for fabrics can now be dyed the same color as the fabrics, with the same dyestuffs, through a technique developed by the Naugatuck Chemical division of United States Rubber Co. A patent has been applied for the "color acceptors" which are blended into standard latex compounds to modify the compounds so they will accept dyes.

Fade- and Weather-Ometers

Atlas Electric Devices Co. is marketing a new line of Xenon Arc fade-ometers and weather-ometers. The Xenon lamp, with a spectral energy distribution very close to that of natural sunlight, is said to be ideal for use as the source of radiation in accelerated fading and weathering machines. The machines have a 6,000 watt water cooled Xenon lamp which provides sufficient intensity to permit simultaneous exposure of a large number of samples. The specimen rack will accommodate



up to 54 samples measuring 3 by 9-inches. The machines provide automatic control of black panel temperature, cycles, etc., and also are available without automatic control of humidity during both the light-on and light-off periods of the cycle.

The Xenon lamp also is available with constant wattage transformers which insure a uniform radiation intensity regardless of variations in line voltage. Control equipment also is provided which permits increasing the wattage of the lamp to compensate for the progressive loss of intensity as the lamp ages. The lamps have an anticipated useful life of 2,000 hours; only the burner tube and not the complete lamp need be replaced. The Xenon arc fade-ometers and weather-ometers are offered by the company as a companion line to its carbon arc machines. For further information write the editors.

More Colored Sheets Sold

Findings presented by The Vat Dye Institute this year regarding market potential for colored bed sheets and pillow cases have been confirmed in actual dollar volume during August White Sales in 10 cities across the country, according to James A. Naylor, Institute president.

MACHINERY and EQUIPMENT SECTION

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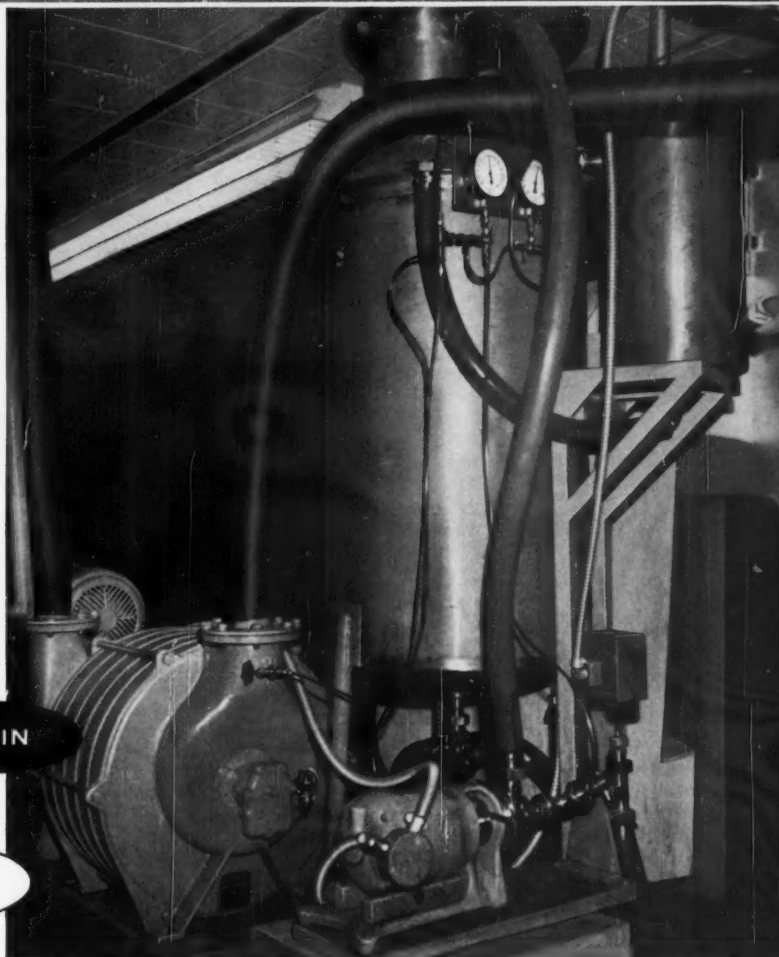
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Scott & Williams Offers New Pique Knitter

A new machine especially designed for knitting pique fabrics with maximum production and performance will shortly be introduced by Scott & Williams, Laconia, N. H. The machine will be available in fine cuts up to and including 18 needles per inch. It will be of the stationary cylinder type with the stationary take-up placed near the floor. Thus it will be able to exert a more uniform tension on the fabric as each course of stitches is formed. There will be 32 feeds on the machine and speed will be at the rate of 23 revolutions per minute. The machine will produce 18 yards per hour or 16.9 pounds per hour of 15 ounce fabric 64 inches wide.

The Scott & Williams pique dial and cylinder is engineered, the company states, to hold the needles in their correct position so that the proper mesh is maintained between the dial and cylinder needles. This feature, Scott & Williams points out, is of the utmost importance when knitting pique fabric in 16 or 18 inches per inch. The special design also prevents the needles from being pulled together due to the manner of knitting pique fabric. The outer edge or combing on both dial and cylinder is made up of inserted steel bits and the walls are of the inserted type. The walls are made of tempered steel and are rigidly held in position by solder.

To hold the dial in a correct position an extra heavy cross bar and spindle has been placed in the machine. The cross bar is equipped with eight adjust-

ing screws so that the dial may be trued to a close tolerance to insure the proper meshing of the needles in fine cuts.

The individual motor drive is a Scott & Williams compact drive of simple design and is said to be highly efficient. All the large members of the machine are especially designed for this large 30" machine. The legs are 4" wider at the top and 1" wider at the bottom than standard legs. This has been done so that the machine will have a rugged support, which reduces vibrations to a minimum.

The center plate, bed plate, and cross bar have been reinforced so that they give proper stability to a large size machine. The right hand drive housing has been designed to properly accommodate the 2 horsepower Fairbanks Morse pancake type motor required to power the machine.

The main gearing of the machine has been changed to a heavier tooth construction, to give proper performance on a large machine. The spindle, dial hub and cap hub are of rugged design, to maintain proper alignment between dial and cylinder.

A new windup has been designed which is attached to the legs of the machine and is therefore an integral part of the machine. The bar on which the fabric is wound may be easily removed from its brackets by lifting a latch on the right hand side. A knob is provided on the right hand end of the bar for ease in handling the roll of fabric.

C & K Diversification Hailed For Restoring Health to Firm

The textile business is and promises to continue to be the backbone of Crompton & Knowles Corp. for the foreseeable future. This was disclosed by James Barringer, vice president and treasurer, in a statement making clear that a continuing program of diversification will supplement the textile machinery output that has been the company's basic business for more than 120 years.

Barringer cited the research and development work done by the firm's Worcester, Mass., plant, the results of which have already started to take shape in the new textile machinery models introduced over the past two years. He also described the growth of Althouse Chemical Co., which C & K acquired in 1954. Althouse manufactures textile dyes.

C & K's diversification program, which got under way in 1953 has brought youth and vigor back to the corporation, Barringer said.

Two years before the diversification program started, the corporation had enjoyed its peak sales year, resulting from postwar demand for textile machinery. Once the demand was met the corporation found itself on shaky ground and the need to diversify was clear. Concerning the company's rebound from its 1953 position, Barringer cited sizable increases in C & K earnings. In the first half of 1960 the company's net sales totaled over \$14,000,000 with net earnings of \$1,359,023. The latter figure, he said, more than doubled net earnings of \$592,322 for the 1959 first half. The corporation's \$5,000,000 investment in diversification through the end of 1959 yielded some \$38,000,000 in additional sales revenue, Barringer said, or 36% "of our total volume from the last quarter of 1954 through the end of 1959."

Following its acquisition of Althouse Chemical Corp. in 1954, C & K acquired Wrap-King Corp., a packaging machinery firm, and Carl N. Beetle Plastics Corp., both in 1955; facilities for making automatic duckpin bowling spotters in the Worcester plant in

1956; the Russell Packaging Co., with operations moved to Worcester, in 1957; and Fimaline Products (plastics), Bates Chemical Co., and F. B. Redington Co. (packaging machinery), all in 1960.

Barringer said that as a result of the three acquisitions in 1960 "we may have to pause for a while to assimilate these various moves." But in the long range outlook, he concluded, "this should be nothing more than a pause."

New Tow-to-Top Unit

A machine said to be capable of processing all man-made fiber tow into tops for the production of long fiber yarns, including both high bulk and normal, is scheduled to be unveiled this month by Roberts Co. at its plant in Sanford, N. C. Called the Roberts-Tematex Tow Transformer, the machine processes normal tops from normal tow such as Dacron, Nylon, Dynel, Vycron, Fortrel, Kodol and Rayon; high bulk tops from normal tow such as Orlon, Acrilan, Creslan and Zefran without the need for second operation heat relaxing; and high bulk tops from two-component tow such as Orlon Sayelle.

The tow transformer is a joint development of Roberts and its Italian affiliate, Tematex Co. of Milan. It has been in production for several months and 12 of the machines are in actual mill operation in European plants. The machines can either cut the continuous synthetic filament, or heat stretch it before cutting the tow into fibers of predetermined lengths of from 2½ to 8-inches.

Roberts asserts it is the only machine on the market able to perform both these tow conversion operations, and make a square cut diagram or a variable length cut diagram. At the same time, it is said to produce up to 15% more than machines presently on the market. Two million deniers can be in-fed into the transformer and production is up to 140 pounds per hour from its single head delivery. It delivers to a can size of 24-inches in diameter by 36-inches high, containing 40 to 70 pounds, depending upon fiber.



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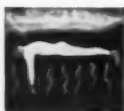
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Home furnishing fabrics 1961

NYLON MOVES AHEAD IN UPHOLSTERY

By the Editors

Developments in upholstery are running neck-and-neck with those in carpets and draperies. One is the increase in nylon usage. Six months after Chemstrand's Cumuloft continuous filament textured nylon yarn was first used in floor coverings, the yarn found application in upholstery. The fabrics were an exclusive collection by Sidney Blumenthal & Co. in 34 styles and a color line called one of the most extensive ever produced in any fabric. At the June market, the fabrics appeared among the lines of approximately 40 furniture manufacturers and 15 jobbers. In upholstery fabrics, Cumuloft nylon is used in three denier counts, as required by the texture desired—520, 1040 and 2080.

Chemstrand has instituted a quality standards program for upholstery fabrics containing Cumuloft. It provides pile weight specifications and requires that major wearing surface yarns be of 100% nylon with at least 40% of this in Cumuloft nylon. Meanwhile, Chemstrand Cadon nylon appears in upholstery fabric for the first time this month. The fabrics, are described as offering the aesthetic qualities of fine silk with the performance characteristics of nylon.

The first frieze upholstery fabrics made of Du Pont's Antron 24 nylon appeared at the June home furnishings market in Chicago. Du Pont's spring exhibit also featured a group of 100% nylon flat upholstery fabrics, including nylon "homespun" in a two-color blend, and the first all-nylon tapestries.

American Enka's Tycora continuous filament textured nylon is featured in a Finch chair upholstered in Ramoc's cross-dyed hobnail fabric of this yarn.

Acrilan has been making news in upholstery since it was introduced a little more than a year ago. It is proving popular in Holyoke's line of upholstery and drapery fabrics, designed for manufacturers of high grade furniture. The fabric is made of plied yarns of 100% Acrilan in the filling, spun on a modified worsted system, and carded cotton or spun rayon warps. Unless a natural shade is desired, package dyeing is used, which Holyoke management finds to be best suited for prestige upholstery. If the fabric is to be used over foam rubber or polyurethane, it is given a thin rubberized backing.

Rayon continues to be important in upholstery, as in draperies. In a special report to MODERN TEXTILES, American Enka said that solution-dyed Jet-spun rayon appears this month in a more extensive selection of upholstery fabric collections. Combined with other fibers, Jetspun is used by Sunbury in two collections, one a puffed matelasse called Lokpuf and the other a brocatelle called Lokbroc. It is also used in Mastercraft's Mysteria collection, according to American Enka, to provide colorful striae undertones and texture effects.

American Enka developed Softflo rayon warp yarn to fill a need for low luster yarns with a silken look. Thus it is primarily used in damasks and matelasses,

such as the Softglo damask-type weave by Stead & Miller used in a sofa by Globe.

When Dawbarn Brothers introduced monofilament slub yarn, designated DLP-53, it was used only in automotive upholstery, indoor upholstery and similar so-called "sheltered" applications. It is now suitable for outdoor furniture, according to test results recently announced. The comparatively inexpensive yarn is said to produce webbing that resembles fine fabrics without a hard, glossy appearance of plastics and is expected in a variety of patterns and colors.

Families nowadays are living in the outdoors more and more and Weblite Inc. has created a decorative yet practical treatment for yard, terrace and garden areas as well as other locations in and around the average home. It is a fencing material consisting of strips of webbing woven of Velon, a saran yarn extruded by Firestone Synthetic Fibers Co. The plastic filaments are interlaced between posts of redwood, cedar or aluminum. Called Weblite, the fencing is translucent, permitting light diffusion, and is available in several colors. It is especially recommended

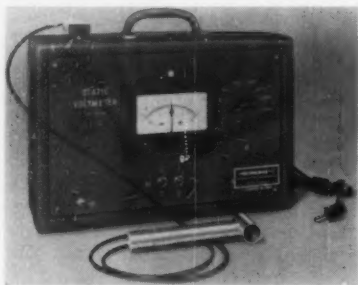
(Continued on Page 36)



TWO KINDS OF CURTAINS—Both caseament cloths and cafe curtains shown here are woven of Eastman Chromspun acetate with rayon

NEW

MACHINERY EQUIPMENT



Static Voltmeter

A new static voltmeter made by Rothschild of Zurich, Switzerland, measures static charges from 0 to 5,000 volts under actual production conditions. The device, sold in this country by Fabrionics Corp., uses a roller electrode to make precise measurements of specific charges on individual threads and strips as well as field measurements. The Rothschild unit permits simultaneous measurements and recordings of charges over 8 ranges: 1, 5, 10, 50, 100, 500, 1,000 and 5,000 volts. For further information write the editors.

Radiant Heater

Corning Glass Works has developed an industrial radiant heater designed for drying, baking, curing and pre-heating. The tubular unit reaches full heating capacity of 800 to 850 degrees F within three minutes, thus eliminating costly warm-up delays on processing lines. Designed for horizontal mounting above or below the process line, the high-watt density heater produces an average of 20 watts per square inch of working space. For copies of bulletin PE-70 describing the heater, write the editors.

Electric Drying Table Units

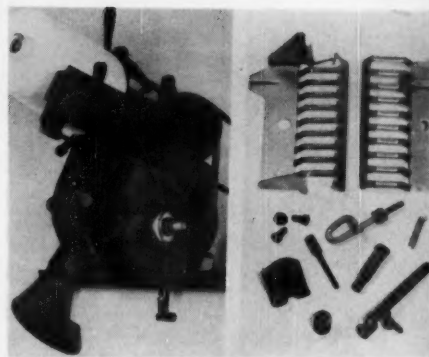
Paramount Textile Machinery Co. has introduced new electric table units which were designed for use by mills without adequate steam capacity or those located in areas where low-cost electricity is available. Two sizes, the standard and half table, are available.

Heat control for a full range of hosiery construction is provided by a readily adjustable control. On the standard table, it allows the 12 forms on each side of the table to be governed by a separate control. Dual control (optional) provides adjustment of four groups of six forms by a single control for the most efficient operating cycle. The tables have been designed for quick change of the forms; the feed pipes and drain lines required for steam-type tables are eliminated. Sealed tubular elements are cast integrally within the aluminum forms. The tables are self-leveling and adjustable in height in a range of 6 inches. For further information write the editors.



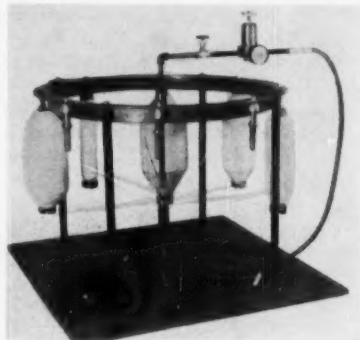
Draper Thread Cutter

Draper Corp.'s new No. 28 thread cutter is especially useful in weaving filament yarns. The unit has these features: filling knife is longer to give a broader range of setting adjustment; cutting action designed to cut from bottom upward, like Stafford thread cutters; camming surface of filling knife trip is lengthened to prevent premature opening of knives and resulting drag-ins; and last, a much thicker filling knife provides a longer tail on filling between the cutting and holding sides of the knife to give additional protection against pull-outs from knife. For further information write the editors.



Yarn Tension Control

The Cona-Mag, an electromagnetic yarn tension control designed and produced by Fabrionics Corp., is said to provide accurate, sensitive control of tension during coning while greatly reducing yarn wear and scuffing. The device not only maintains constant tension on each cone but ensures equal tension on all cones because many Cona-Mags can be controlled from one central potentiometer. For further information write the editors.

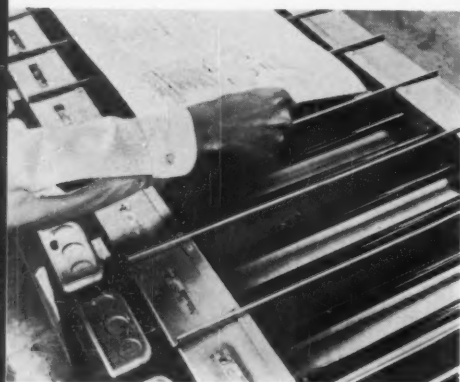


New Bobbin Stripper

Precision Gear Division of Perfecting Service Co. is offering a new bobbin stripper, the PSC Jet Stripper, for removing roving from 8 bobbins (8 x 4 to 14 x 7) simultaneously at a rate of up to 200 yards per minute. Using a jet stream of air, the stripper removes the roving without damage to the bobbin and delivers the reclaimed roving in a "fluffy" reworkable condition, ready for immediate reprocessing. The stripper is a lightweight, portable machine that can be easily moved to any desirable spot in the card room. For further information write the editors.

Lindly Yarn Inspector

The fully transistorized Lindly series 1000 ultra yarn inspector is featured in a new, four-page brochure issued by the Electronic Sales Division of Foster Machine Co. The ultra yarn inspector is designed for use primarily by synthetic yarn producers and processors. For copies of the new brochure, Bulletin No. A-200, write the editors.





Criterion...

Seldom, if ever, has a new machine made such impact on spinners and spinning practices as has the Whitin Piedmont Spinning frame.

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PIEDMONT

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January Market Report

(Continued from Page 33)

for places where the expense or barricade-appearance of solid wooden fencing is not desired, and where circulating breezes are wanted. It is also suggested for use indoors such as for room dividers and decorative screens.

Decorative treatments in automotive upholstery and carpets in 1961 will include seat covers in jacquard designs similar to original bodycloth by Collins & Aikman. The company will devote 70% of its '61 seat cover line to these innovations, in the belief that there is a need in the replacement automotive market to upgrade quality, styling and color. The principal fiber will be nylon.

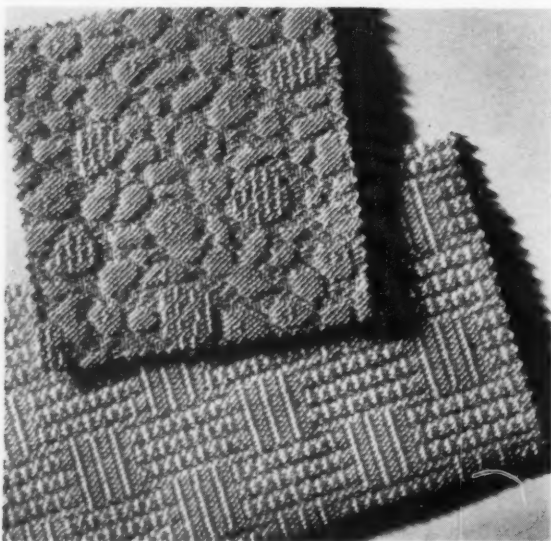
News in Domestics

While colors, colors, colors abound in the modern home, there is simultaneously a strong interest in white, especially in what is called "white" white. In sheets, pillow cases and blankets, white is often the background for prints and stripes, providing bed linen that often can double as everyday decorative bedspreads. Blanket manufacturers today are stressing this dual function. There are solid color blankets with wide velvet or embroidered bindings. There are blankets of 100% Acrilan made with a quilted effect on one side and a napped surface on the other.

In September, Du Pont announced new blankets of 100% Orlon with improved performance and washability as a result of a new development called fiber-sealed. The first line of fiber-sealed blankets were made by Beacon Manufacturing Company, in eight colors and white and in four sizes.

Creslan blankets are proving themselves at the retail level. Montgomery Ward introduced a selection made to its specifications, at its annual May lay-away sale. Macy's also added a line of 100% Creslan blankets in the past year.

The Hospital Bureau Inc. found, in a test of six types of hospital blankets, that those woven of 100% Dynel modacrylic fiber were best for this institutional use. A notable advantage cited in its report was Dy-



FAST COLOR—Enko's Jetspun solution-dyed rayon gives long color life to these upholstery fabrics



NEW NYLON—These upholstery cloths are woven of Du Pont's new "Antron" nylon, marked by a soft luster

nel's flame resistance, which was superior to the other blankets tested. The Dynel blankets were woven to Hospital Bureau specifications for distribution to its members by Pepperell Mfg. Co.

Rayon is being used in new ways in domestics. Topel, Courtauld's cross-linked rayon fiber, has been introduced in linens in a 70/30 blend with flax. The fabric by Timely Linens has a Scotchgard stain repeller finish incorporated in the cloth. It is used in table cloths and napkins in varied colors.

A reversible tablecloth by Ex-Cell Plastics has Celanese acetate tricot on one side, plastic on the other. The fabric is styled by Fairway Plastics, comes in several sizes, patterns and color combinations.

A significant advance in towel manufacturing, reputed to be the first in about 150 years, is Callaway Mills new bath towels of cotton and Avril rayon. The fiber, which was recently developed by American Viscose Corp., is said to impart increased absorbency, shrink resistance, softness and color clarity. Callaway's initial offering consists of three styles in 10 colors. Prints are to be offered in the near future.

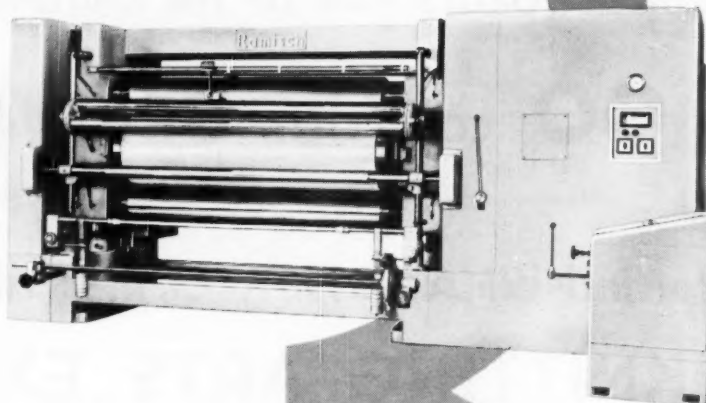
Maremount Can Keep Saco Stock

Maremount Automotive Products, Inc., as a result of a Federal district court consent decree issued in Chicago on December 9, 1960, will retain its majority stock ownership of Saco-Lowell Shops, producer of textile machinery, ordnance and automotive parts. The order, however, directs Maremount to cause Saco-Lowell to sell the machinery and equipment used by that firm to manufacture automotive mufflers at its Saco, Me., plant.

In an earlier antitrust suit, dismissed by a Federal court in Portland, Me., last August, the Government had asked complete divestiture of all Saco-Lowell stock held by Maremount. Unaffected by the Chicago decree is Maremount's ownership of stock, as well as Saco-Lowell's current production of textile machinery, military ordnance and automotive parts other than mufflers.

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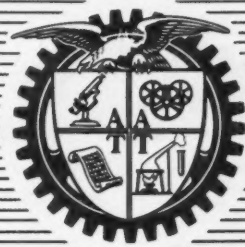
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PAPERS OF THE
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A A T T

Where ORLON stands today

Du Pont's acrylic is now a "family" of fibers

Orlon's background

By George S. Demme

WE STARTED our Orlon staple and tow enterprise in 1952 with a product which we then knew as Type 41. This product had a few deficiencies and in April 1953 we made our first big merge change to the product which we know as Type 42. Mostly, we like to refer to April of 1953 as a starting point for marketing Orlon staple and tow. At that time we still had many problems facing us with this new product. The product required improvements in coloration, whiteness, finish, bulk, mechanical quality of staple and tow, and processability. Therefore, through the balance of 1953 and 1954 our main efforts were aimed at getting various problems solved. How they were solved would be a speech by itself, and I won't get into that now.

It's sufficient to say they were solved, and we commenced to plan where we could go from this Type 42 base. We had in this product a reasonably good balance of properties and a fiber that appeared not to have any particular limitations in various end-use categories. Naturally, we studied various markets and end-use areas—what new products were needed to enter or expand these markets.

As you know, we made our first penetration in depth in the sweater field. We were fortunate in that period that the classic pullover and cardigan were the accepted sweater types of the day, and Orlon Type 42 acrylic fiber suited that market just right. But we knew then that if we were to grow and expand, it would be necessary for us to have fibers or a family of fibers that could be used to make whatever type of sweater that this dynamic industry needed, or style trends dictated. We knew also that it would be necessary to establish Orlon in sweaters in a wide price range. We hoped to range from as low as \$2.95 on up to \$22.95 or even higher. It would be necessary for us to have that volume business but at the same time we

knew we had to maintain our position in the prestige areas.

Of greater importance if we were to expand this business, we would have to diversify in other end-use areas, such as woven fabrics, pile fabrics, carpets and the broad circular-knit field that consumes annually over 365 million pounds of fiber, or that 96 million pound sock or half-hose field. We needed staple and tow to cover the various systems of spinning. In order to do this, we had to have products that would be specifically engineered for these various systems, and they would have to be soundly priced for these market areas.

We discussed markets and end-use areas and what new products we needed to enter or expand these markets. Then we gave our research people specific

Demme is product manager for Orlon acrylic fiber in Du Pont's textile fibers department. On Jan. 30, he completed 41 years with the company. He started as a helper in Du Pont's Eastern Laboratory, and studied chemistry and engineering at nights at the Drexel Institute of Technology in Philadelphia. After working as a chemist and plant supervisor he entered Du Pont's rayon operations at Old Hickory, Tenn., in 1925.



George S. Demme

orders. We said we wanted particular properties built into particular fibers to sell at certain prices for use in specific consumer products. A measure of the tremendous competence of Du Pont research is that these specific orders have been filled. In addition, research

has supplied some products we didn't ask for which have been commercialized. We now offer a family of Orlon acrylic fibers for use not only in sweaters, but also in a wide variety of knitted structures, blankets, carpets, wool and cellulosic-type fabrics, as well as silk and hair or fur-like fabrics.

How markets are created for Orlon

By Collins Thompson

SEVERAL YEARS ago our organization adopted a plan to invent, develop, and commercialize a substantially broader line of Orlon acrylic fibers. This has been essential in order to expand acceptance of our fibers into the full range of textile markets where Orlon logically fits—the end-uses where Orlon has already been commercialized, and other worthwhile opportunities beyond those.

Perhaps the most interesting phase of this effort has been the approach to key market selection. As a general precept, we have taken what is best described as the "market oriented" approach, advised by the marketing organization. Under this approach, we have looked through the collective eyes of the Du Pont textile fibers divisions at elemental requirements in fiber properties and performance for really good acrylic fibers needed in each major poundage market, including sweaters, knitwear and woven outerwear fabrics where Orlon already has moved well. We have looked beyond these areas to such growth markets as carpets, animal effect fabrics, cotton type fabrics, blankets, and hosiery. Through product and market analysis, we next chose certain visionary new products beamed at prime consumer-market needs.

Our people working on fundamental and applied research, end-use research, fabric development, technical service, and marketing services have combined the necessary inventions, technology, processes and commercialization plans to crystallize a family of promising new products in line with the original studies. In advanced experimental form, these candidates have been intensively demonstrated in appropriate ranges of garment and textile forms in our major research facility at Chestnut Run. In final phases prior to introduction, standardized products have been further proved to confirm reproducibility of Chestnut Run trade-scale demonstrations in mill prove-outs in interested customers' facilities.

The market-oriented fiber approach has been highly successful through the stage of initial commercialization, where it stands now. For the seven prime end-use brackets where today we believe Orlon acrylic fiber should compete, there were just three product types in 1958, two of the volume market type and one for prestige apparel. Thus, it was necessary to sell Type 42 varied only as to denier, staple cut length, and tow forms into many end use areas, including:

- Sweaters
- Circular and jersey knits
- Broadwoven goods of cotton and worsted types
- Pile fabrics
- Hosiery

For woolen type apparel goods and blankets, the woolen system T-39 staple was offered. No Orlon carpet product was available.

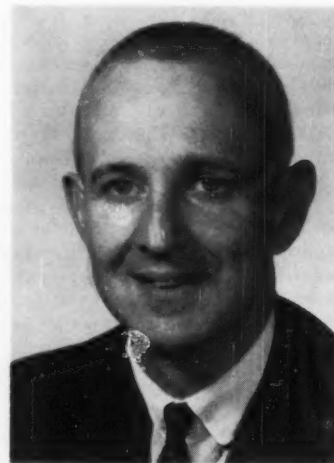
Today—through product introductions during the past three years—the number of distinct Orlon types has been increased from three to 12 with the addition of the following items:

- Orlon Sayelle Types 21 and 24 bi-component fibers
- Type 28—Animal-effect staple
- Types 36 & 37—Carpet staples
- Type 38—Tow and staple for deep-pile
- Type 44—Cross-dyeable tow
- Type 72—Skin-contact apparel staple
- Type 75—Cellulosic blending staple.

The program has further expanded the range of product types from one per end use to two or more, except in woolen woven goods and blankets, where Type 39 regular, Type 39 A, and Type 34 B have proven fully adequate to date.

Perhaps the main feature of the expanded fiber family—aside from its superior coverage of various end markets—is that it has given us a strong line of prestige or premium fibers. The health of the textile business traditionally requires steady progress into volume merchandise brackets of developments originating in higher priced apparel. This progression or "style-flow" is essential to cope with the natural maturity and obsolescence of older fibers and fabric types. It can proceed only if a steady in-put of new prestige items can be maintained. Familiar as we are with this vital sequence, we have chosen to generate the in-put with one portion of our new product family including:

Thompson is development assistant in the Orlon products division of the Du Pont Co. He joined Du Pont's engineering department in 1940, and was transferred to the textile fibers department in 1947. In 1956 he was assigned to work with Orlon. He is a graduate of Washington University.



Collins Thompson

Orlon Cantrece acrylic fiber
Orlon Sayelle acrylic fiber
Type 28—Animal-effect

We believe it is noteworthy that in no case to date have we been restrained by technical obstacles from achieving an aim determined initially as important for a business opportunity. The research program producing this markedly increased product line is continuing. Good opportunities exist to sustain prestige-to-volume merchandising with the technical program feeding into it uninterrupted acceptance growth for Orlon acrylic fiber.

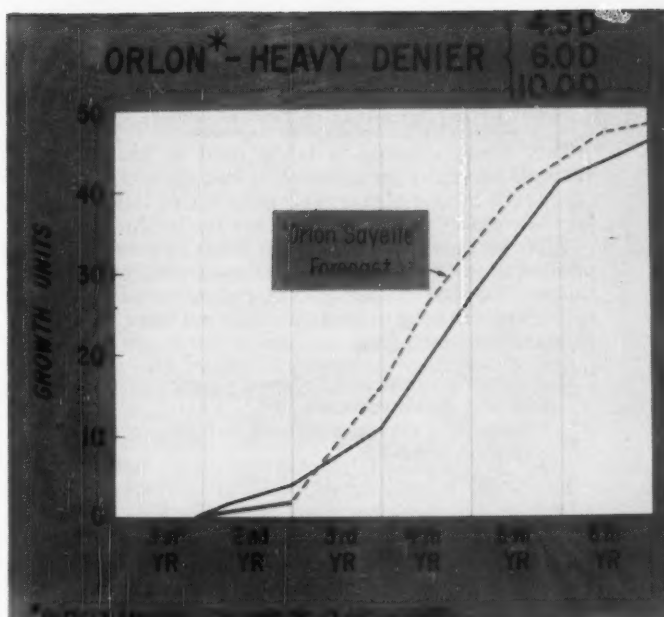
From a marketing standpoint there have been several key developments.

First, is the Orlon Sayelle acrylic fiber family which now is in commercial use for sweater and knitgoods of new bulk, elasticity and aesthetic effects.

Convincing as these features have been in commercial bulky and styled sweater types, our demonstrations with the recently introduced Type 24 product have shown that quite probably the prime potentials for this whole fiber category will evolve in full-fashioned and fine-gauge knits for fabrics normally calling for animal fibers in the 64 singles to 80 singles fineness range. As supplies and prices of such natural fibers are unfavorable or prohibitive for most practical uses, the Orlon Sayelle group is aimed for a unique and major opportunity. Similar prospects appear at hand in outerwear woven fabrics where our demonstrations show fabric cover, compressional resilience, elasticity and tactile ratings are at new high levels not previously achieved in suiting, slack, skirting fabrics of 100% Du Pont fibers.

A second important development is Type 28 animal-effect staple, which combines pre-selected parameters of slick tactile aesthetics with rich luster and very low crimp.

For classes of sweaters and knitgoods of stylings requiring the coarser, lustrous animal fibers, Orlon Type 28 acrylic fiber should be quite an effective new blend staple. It is particularly useful in 20 to 35% blends with Orlon Sayelle acrylic fiber, combining the loft, elasticity and performance of the latter



with the special surface aesthetics of the Type 28 in shag, bulky and related sweater stylings.

This development should lead, in time, to a broader group of Orlon animal-effect fibers for prestige knit and woven applications. This family would offer further useful combinations of crimp and fineness with slick-fiber touch.

For cotton blend underwear, sport shirts, baby garments, blouses and the like we have Type 72 skin-contact staple. This cotton system product must have potent consumer merits in view of the excellent balance of performance, aesthetics and economics readily available in cotton goods, in these end uses. Specific merchandising features of Type 72 staple include:

Outstanding comfort values in hot and cold weather next-to-skin wear.

Whiteness equal to bleached, brightened cottons

FAMILY OF ORLON® ACRYLIC FIBERS

PRODUCT	END USE AREAS					
	SWEATER AND KNIT	WEAVE	PILE FABRIC	SHAG	SHIRTS	BLANKETS
ORLON SAYELLE* (Types 21 & 24)	■		■	■		
TYPE 36 CARPET STAPLE (100% Pile)					■	
TYPE 37 CARPET STAPLE (Blending)					■	
TYPE 38 PILE FIBERS			■			
TYPE 39 WOOLEN TYPE			■	■		■
TYPE 42 REGULAR			■	■		
TYPE 44 CROSS-DYEABLE				■		■
TYPE 72 COMFORT STAPLE				■		
TYPE 75 CELLULOSIC BLENDING			■	■		
ORLON CANTRECE** C.F. YARN						

* DUPONT'S TRADEMARK FOR ITS BI-COMPONENT ACRYLIC FIBER

** DUPONT'S REGISTERED TRADEMARK FOR ITS FILAMENT ACRYLIC FIBER

ORLON'S GROWTH—
This chart shows the ten types of Orlon fiber available and indicates the recommended end uses for each

without need for bleach.
Whiteness stability in home laundering.
Retention of softness and dimensional stability in repeated laundering.
Dyeability, coloration values, and general physical properties equal to regular Orlon Type 42.

This comfort staple is being used in increasing amounts currently for lightweight knit apparel, showing results in skin contact garments where initial and lasting comfort and appearance are really wanted.

Type 36 Carpet Staple is for 100% pile use. This product is designed as the key to broad scale penetration of the 100 million-pound annual wool carpet market by bringing to bear, in undiluted form, certain fiber features including:

Color brightness and fastness.
Soil and static resistance.
Cleanability comparable with natural rug staples.
Superior wear-life.
Competitive pricing (bulk considered).

A key advantage for this new Orlon acrylic fiber carpet pile is that it permits merchandising campaigns that are direct, forceful presentations of the consumer values involved, free from distractions unavoidable in marketing the blend concept.

The Type 36 100% pile staple has been introduced recently as a companion product to the Type 37 blending staple commercialized early in 1960. Industry acceptance of these Orlon pile fibers—the original and the new—should confirm the power of the market oriented approach to new product development.

Now Type 44 cross dyeable tow is being put on the market for evaluation and appraisal. Technically, we believe this to be an outstanding and superior product. It is a differentiated polymer type having virtually the same physical properties as conventional Type 42 fibers, while in combinations with Type 42 it is cross-dyeable in the piece. Regular acid dyestuffs are used for two-color or color-and-white contrasts in

heathers, stripes, bands and patterns. The range can be increased, of course, with blends of Type 44 with Type 42 in both regular and color-sealed black.

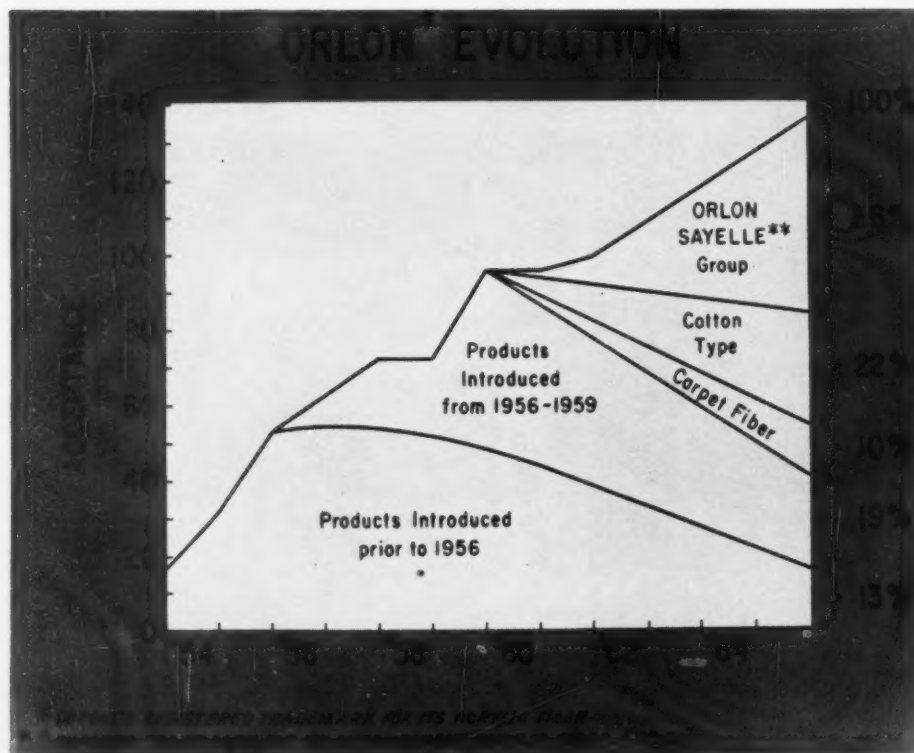
Our Type 44 product has been introduced for evaluation only after the same sort of intensive technical program that lies behind the Orlon family of acrylic fibers generally. Over-all work recognized at the outset that a product of this type must be on a par with the high standards of quality and performance for Orlon as now known in the following terms:

Aesthetics
Bulking ability
Physical properties
Color clarity and stability under heat conditions of finishing and garment service
Tow mechanical quality and runnability.

Our internal prove-outs suggests we have a fine product for low cost piece-dye stylings. A full-scale mill prove-out has further confirmed this. Type 44 is to be made available in six denier tow form at \$1.23 per pound. Three denier tow and staple products in the 44 series will be coming along, probably priced at \$1.33 per pound.

This leads to still another thought—what could be done with the three fibers T-44, T-42 regular, and color-sealed black with a fourth product—a white dye-resist staple? We are now evaluating such a product internally. It should lead to a really versatile cross-dye system.

Today our family of fibers enables us to compete in seven major end use areas with modern products custom-tailored by the goal-fiber approach for specific end product service and price requirements. Products are provided for both prestige and mass volume merchandising. In the months ahead, additional product types will be added for other known opportunities. We believe the expanding Orlon family of fibers is an effective vehicle for fostering further acceptance of Orlon acrylic fiber by the consuming public and the textile industry.



PAST & FUTURE—
Du Pont's marketing strategy for Orlon is illustrated in this chart. The chart shows how Du Pont's planned "input" of prestige fiber types is made to work

Principles of engineered Orlon fibers

By Elija M. Hicks, Jr.

THE NEEDS of widely varying markets for Orlon acrylic fibers require a diversity of fiber properties. It has been necessary to establish as research objectives the specific property needs of a given market. Simply stated, the textile technologist sets our research objectives by defining what the fiber must embody to fulfill processing and performance requirements of a given end use. These become the basis for research programs.

Generally, the user of a product expects certain things of the product. It may be warmth, durability, washability, bright color or other such characteristics. The textile technologist recognizes these to be related, sometimes directly, but sometimes quite indirectly, to fabric structure or to fiber characteristics. In many cases, it is difficult to specify the fiber properties which will result in the most satisfactory product. However, in engineering a fiber for an end use, property parameters are our only tools, and it is with these tools that we must work.

From the numerous principles applied in engineering Orlon acrylic fibers, the five which follow may be considered typical:

- Crimp
- Surface character
- Luster
- Shrinkage
- Dye receptivity

Each will be considered as it applies in a fiber engineered for a given end use.

The importance of crimp as a principle in engineering Orlon acrylic fibers can best be described by citing as an example the development of Orlon Sayelle bi-component acrylic fiber.

The concept of the Orlon Sayelle fiber stemmed from observations of natural fibers, particularly wool. Wool exhibits a very high degree of crimp which is important to its tactile properties. It exhibits a live behavior in finishing and wet processing due to its reversible crimp. It has a high degree of loft, resulting from its three-dimensional crimp structure.

All these properties have been shown by research to result from the fact that wool is made up of two distinct components side-by-side in each single fiber. The two components swell to different extents in water to cause decrease of crimp on wetting and increase of crimp on drying. The spiral nature of the crimp—and thus the bulk—also results from the different response of the two components to water. This two-component nature is known as the bi-lateral structure of wool.

It appeared logical that if a bi-lateral or bi-component structure could be accomplished in a synthetic fiber and if these components responded properly to physicochemical conditions such as heat and water, a combination could be made in one fiber of properties of a synthetic with the characteristics of wool.

Bi-component filaments have been produced within the acrylic polymer system in the denier range of

normal apparel fibers (three to six denier per filament) with structure tailored to respond to heat and water. The components involve unique chemical modification of acrylonitrile polymers to achieve differential properties across the fibers. It is quite obvious also that unusual engineering requirements had to be met, since the filaments involved have diameters less than one-thousandth of an inch.

In appearance, the fiber differs significantly in cross-section from conventional Orlon acrylic fiber. The cross-section is rather acorn-shaped instead of the familiar dog-bone shape and is not unlike wool in this regard. The two segments of the cross-section are clearly distinguishable.

The physical properties of the bi-component fiber are quite similar to those of conventional Orlon. Tensile properties, initial modulus and transverse properties fall in the normal range for Orlon. Moisture regain of 2.6% at 65% relative humidity is about 1% above that for current "Orlon". The bi-component Orlon fiber exhibits a low regain over the complete range of humidities.

This bi-component acrylic fiber, designated Orlon Sayelle produces a three-dimensional crimp on heat treatment and a reversible crimp upon wetting and drying. What effect does this have on fabrics? The most apparent effect is that of aesthetics. The fabric has the touch and feel of wool, exhibiting a greater roughness and friction than is noted with conventional acrylic fibers. This desirability of aesthetics is quite evident in sweaters and suitings prepared from this bi-component Orlon Sayelle acrylic fiber.

The second important characteristic imparted by this fiber is fabric elasticity. A graph of stress-strain hysteresis behavior shows a degree of elasticity imparted by the character of the crimp which is quite unusual in synthetics but which has heretofore been

Hicks is director of the Orlon acrylic fiber division of the textile fibers department of the Du Pont Co. He joined Du Pont in 1944 as a chemist. After holding research and supervisory positions in Richmond and Buffalo, he was transferred to Wilmington in 1956 to do technical service work. In 1959, he was appointed to his present post. He holds a B.S. degree in chemistry from Furman University and a Ph.D. in organic chemistry from Princeton.



Elija M. Hicks, Jr.

an attribute monopolized by wool. This can be seen in a practical way in a hand knitting yarn where elasticity is of vital importance. Another practical demonstration is in sweater bands, where elasticity is essential to performance.

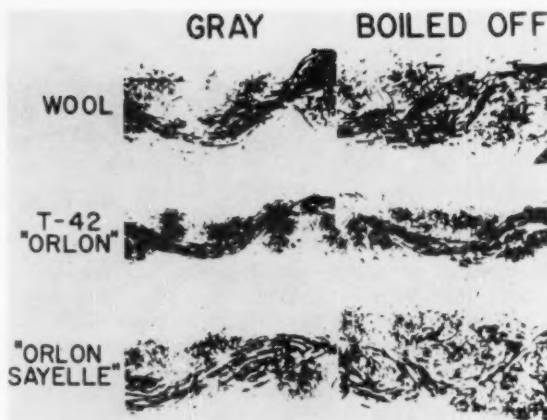
A third characteristic imparted to fabrics by this type of fiber is loft or bulk in combination with lightness. It is possible to get high bulk without coring in the cross-section of the fiber bundle. It is not necessary, then, to use two kinds of fiber—high- and low-shrinkage—to get high bulk. Comparison in knit structures, such as sweaters, shows the nature of the loft which can be obtained with a bi-lateral fiber in contrast to a conventional monofiber. Note that all three characteristics cited depend directly upon fiber crimp.

The fiber just described is Orlon Sayelle Type 21 acrylic fiber, introduced a year ago for styled sweaters and hand knitting yarns. To make the bi-component principle more broadly applicable, particularly for classic sweaters and jersey, modifications of crimp characteristics were required. These modifications, which result in luxury aesthetics, along with good use performance in classics, are incorporated in our new Orlon Sayelle Type 24.

The role of surface character in fiber properties is illustrated by Orlon Type 72, a 1.5 denier per filament fiber for cotton system processing, introduced a few months ago. This product is outstanding in comfort when used in next-to-skin garments. The fiber gives garments which are warm in winter and cool in summer.

Consider first why Orlon Type 72 acrylic fiber is comfortable in winter. Under such conditions, relative humidity is low and little perspiration is present to be picked up by the next-to-skin fabric and ultimately transmitted through the layers of outer clothing. Under those conditions, because of the inherently bulky nature of garments made from Orlon acrylic fiber, considerable air is entrapped and the fabric acts as an insulator, so the body temperature is maintained.

On the other hand, during warm weather, when only a few layers of light clothing are used, it is also comfortable. Under such conditions, the body perspires; consequently, considerable moisture must be con-



ducted from the skin. When this moisture is allowed to evaporate quickly, the body is cooled. It turns out, because of the surface properties of Orlon, that it wets rapidly—as quickly, as a matter of fact, as does cotton. A large amount of water can be picked up by this fiber; in fact, 25 grams of fiber will hold 100 grams of water.

In contrast to cotton, Orlon acrylic fiber has a relatively low moisture regain, and water does not saturate the interstices of the fiber. Because of the character and the large surface area available for the transport of moisture from the skin by the Orlon acrylic fibers, moisture is quickly conducted away from the skin and is rapidly evaporated because of the thin film of water spread out over the surface of these fibers. Since lightweight clothing is worn, the water evaporates relatively quickly and the skin is cooled. Physiological tests under warm weather conditions show this Orlon to be more comfortable than regular Type 42 Orlon and than cotton.

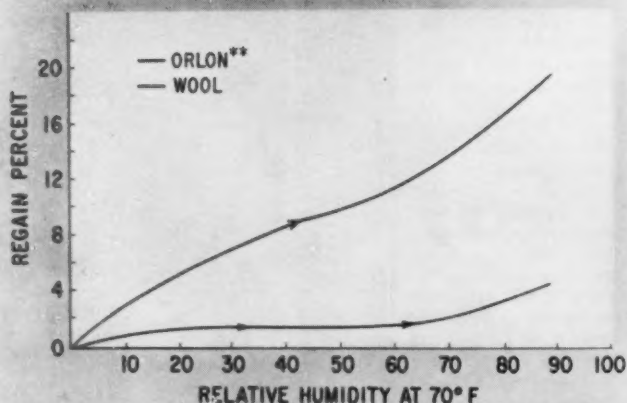
An added characteristic required by cotton system types of fabrics is whiteness and brightness. Orlon Type 72 has been designed to be used without bleaching. It inherently has the good whiteness and brightness of bleached and brightened cotton. The product has excellent whiteness retention during use. Based on laboratory tests, its good whiteness and brightness is retained even after 20 launderings.

There is probably no more important factor than luster in acceptability of a textile for a given product. At the same time, there is a very limited understanding of what we mean by luster as it applies to a given product. Basic study of the subject of luster by our research organization has indicated more than ten distinct kinds of luster, several of which can be present in a single fiber. We are usually reduced to defining the luster goal in terms of the appearance of some known fiber or fabric.

In considering a product to meet the needs for premium aesthetics of the brushed knit and woven fabrics, a goal of similarity to more coarse animal fibers was set. These fibers exhibit a reasonably bright luster, but, at the same time, a depth of luster. A heavy-denier (8.5 denier per filament) Orlon acrylic fiber has just been produced in limited commercial quantities which has incorporated the brightness and luster depth required to yield the desired appearance. Comparison of knit structures containing this new Type 28 product with similar knits containing a typical natural fiber demonstrates the success in engineering the desired luster.

An added requirement of a fiber for this market was a combination of crispness along with freedom

MOISTURE REGAIN OF ORLON SAYELLE* AND WOOL AT 70° F.



* DU PONT'S TRADEMARK FOR ITS BI-COMPONENT ACRYLIC FIBER ("O"-21)
* DU PONT'S REGISTERED TRADEMARK FOR ITS ACRYLIC FIBER

DISCUSSION

from scratchiness. The solution was to provide crispness by coarse denier and smoothness by surface modification. Type 28 fiber has a low surface friction in the range of that for premium natural fibers in contrast to the relatively high surface friction of standard Orlon acrylic fibers.

The use of differential shrinkage of fibers has been an important factor in the success of Orlon from the outset. Obtaining of high bulk via the high-low shrinkage principle has been the keystone in knit structures of Orlon. Another application of shrinkage has come to the fore in recent years: animal effect fabrics.

Naturally occurring furs exhibit a complex structure which can be described grossly as consisting of two kinds of fibers: (1) coarse, straight, long "guard hair" and (2) soft, curly, short "down hair." The textile technologist found a route simulating this two-height pile by the ingenious use of differential shrinkage. A fabric was made by sliver knitting a blend of high- and low-shrink fibers, exposing the fabric to heat to shrink the "down hair" component, fur-ironing the pile to straighten the "guard hair" component, and shearing. The differential in height desired made necessary a 40% shrinkage of the "down hair."

No Orlon product existed which could give the necessary shrinkage level. To meet this need, a tow of Orlon acrylic fiber was engineered which responded to a hot-drawing operation to give a shrinkage level of 40 to 50%. This product, Orlon Type 38 tow, not only gives the high shrinkage, but by processes developed in the trade can be tow-dyed and hot-drawn. An indication of the contrast of the Type 38 product with Type 42 can be gained from the relative response to heat of the drawn products from the respective tows.

In the early days, and even recently, synthetic fibers have been criticized for their difficulty of dyeing. Orlon acrylic fiber at the outset was no exception. Because synthetic fibers can be engineered, however, the curse of poor dyeing can be transformed by polymer modification into tailored dyeing behavior. Thus, today, Orlon yields with basic dyes the brightest, fastest colors of any fiber.

Employing the principle of selectivity of dye acceptance, an Orlon fiber has now been developed which adds the dimension of color styling to Orlon. Through basic modification of acrylonitrile polymer, Orlon Type 44 has been engineered to accept acid dyes. In combination with Orlon Type 42, this new product allows cross-dyeability in single-bath, piece-dyeing operations. Importantly, inexpensive acid dyes may be used to give very satisfactory brightness and light and wash-fastness. The fastness properties are superior to those normally obtained with acid dyes on acrylics but do not equal fully those of the basic-dyed component of the blend or patterned fabric. The freedom from staining and ease of stripping are significant features of Orlon Type 44. The textile technologist is provided thereby an added tool to use in applying his ingenuity to fabric design.

Application of sound principles has allowed the engineering of Orlon acrylic fibers to meet the needs of specific market areas. Five of these principles have been cited, with examples of their application in new Orlon products. With sound guidance from textile engineers and technologists as to needs for superior end products, additional principles will be applied to yield new and improved Orlon acrylic fibers in the future.

Following the presentation of the prepared papers, there was a discussion period during which questions from the audience were answered. The following is a summary of some of the questions and answers.

J. L. LOHRKE (J. L. Lohrke Co.): How do the aesthetics of Orlon Type 44 acrylic fiber 100% high bulk compare with Orlon Type 42 100% high bulk in knitted outerwear?

ANSWER: Orlon Type 44 yields fabrics quite similar to those of Type 42 in hand, bulk, and pill resistance.

O. ENGLEHARD (Native Lace & Textiles, Inc.): Are you producing continuous filament Orlon yarn?

ANSWER: We make one filament yarn, Orlon Cantreze in 200 denier 80 filament semi-dull. We do not plan to expand this line.

B. J. WARKOW (Hill Brown Fabrics, Inc.): Can Orlon Type 44 cross dyeable be used as a warp yarn or only as a filling yarn?

ANSWER: It can be used generally in a manner similar to Orlon Type 42.

G. M. GREENBERG (Maidenform Brassiere Co.): What is the lightfastness of the white bright Orlon Type 72?

ANSWER: Orlon Type 72 is manufactured as semi-dull only. It has a Fade-Ometer fastness of about 20 hours.

W. H. HINDLE (W. H. Hindle, Inc.): Do the various types of Orlon discussed have identical second order of transition points?

ANSWER: Because there are chemical differences in the polymer, there are small differences in second order transition points.

R. B. COOK (Werner Textile Consultants): Does the spiral crimp in Orlon Sayelle bi-component acrylic fiber always take the same path? If so, is there any difference in yarns spun with left or right hand twist?

ANSWER: The spiral crimp takes a random path. Thus there is no difference in yarns spun with left or right hand twist.

J. B. GOLDBERG: How much of the retained moisture in Orlon Type 72 acrylic fiber is due to entrapment by fiber interstices (e.g. in crimped nylon filament yarn)?

ANSWER: Orlon Type 72 has quite a low crimp; crimp, thus, is of minor consequence in water retention. The major factor is the surface area available combined with the nature of the surface. This is the only factor of importance in transporting water from the skin of the garment wearer to the fabric surface.

E. FREEDMAN (R. H. Macy & Co.): How can one differentiate between the different types of Orlon acrylic fiber in finished products?

ANSWER: A combination of laboratory tests for filament, denier, cross-section, dye staining and fluorescence will allow differentiation of the products. Advice on this subject can be given by Du Pont's Technical Service Section.

Marvin Cross

(Continued from page 21)

Street as an office boy. And as he sits in his very modern office at 111 West 40th Street, in the heart of the new uptown market, he often admits of a nostalgia for the old-fashioned uncrowded Worth Street district now almost completely abandoned by the big selling houses.

Marvin Cross came to Worth Street in 1908 as an office boy for Wellington Sears at \$5 a week. Almost from his first day with the firm, he was eager to try his hand at selling, but his bosses, regarding him as far too young for so important a job, would not hear of it. But after four years, during which he learned a lot about fabrics working in the samples department, his determined pestering for a chance to sell was one day abruptly acknowledged by Lincoln Grant, a Wellington Sears partner.

"All right, you're a salesman," Grant said, handing him a price list and a stock sheet. "Now go out and sell".

A Search for Customers

Thus with no more encouragement than these gruff words, Marvin Cross, at the age of 19, set out to find customers for Wellington Sears' ducks. He was given no list of prospects, and no clues as to where he might find them. But he knew that ducks were used for tarpaulins and sails and he went to the district where tarpaulin and sail makers had their shops—South Street along the lower East River in Manhattan. There he went from loft to loft, walking in, cold turkey, showing his samples and asking for orders.

On the second day of such strenuous digging for business, he came up with his first order. It came from David T. Abercrombie, of Abercrombie & Fitch, whose specialty was the outfitting of sportsmen and explorers, and it was for 1,000 yards of Wellington Sears' fine government standard shelter tent duck. Abercrombie wanted it for tents for a polar expedition he was outfitting.

With this beginning, Cross within a few years built up a good additional business among firms in and around New York for Wellington Sears' wide range of ducks and other industrial fabrics. Another customer of his in those early days and one whose acquisition was typical of Cross's ability to get business where other salesmen failed was the sporting good manufacturer, A. G. Spalding, who bought a great deal of canvas for such uses as indoor running tracks, wrestling mats, baseball and golf bags. Cross first got hold of Spalding as a decidedly dim prospect (the firm had passed over Wellington Sears for a long time) when another salesman offered to swap with him for a brighter Manhattan prospect. Cross was willing since he had a good customer in Brooklyn close to the Spalding plant. In time, he made a number of calls on Spalding without getting any business.

One day, however, when still hopeful, persistent, friendly and cheerful, he dropped by, the purchasing agent surprised him by coming out of his office and saying, "Cross, I'd like to show you through our plant if you can spare a few minutes". Cross was willing, and after a thorough tour of the factory and an extensive lecture on how Spalding made its products, the purchasing agent said: "Cross, I'm going to give you our duck business. We want good quality and we want a fair price. I'm going to leave it to you to see that we get them. I don't have time to keep track of price fluctuations in the fabric market. As long as

you give us the kind of goods we want at fair prices, you will have our business. So it's up to you to see that the matter is handled properly."

The lessons he learned in successful service selling from these early experiences, Cross often sums up in talks to younger salesmen by saying, "Customers are harder to get than orders".

A steady record over the years of growing success in time made Marvin Cross one of the most respected men in Worth Street. In 1930, he labored patiently and earnestly for more than a year as a yeoman member of the committee that made the first draft of the definitions of fair trade practices that were later to become the famous Worth Street Rules.

An Auspicious Invitation

In 1937, his reputation as a man who combined the greatest integrity with a wonderful ability to move goods brought him an invitation to join Southeastern Cottons as a vice president. At that time Southeastern was one of the major Worth Street houses, selling the output of about 40 mills including Springs Mills, Avondale Mills and Greenwood Mills. Cross later earned the promotion to executive vice president of Southeastern. In 1946, when James C. Self, the fabulous builder of the highly successful Greenwood Mills, decided to set up his own sales organization he asked Cross to become its president.

An extremely modest man who dislikes to talk about his own achievements, Marvin Cross is quick to point out that the pre-eminent position in the textile world of Greenwood Mills is the work of many men, and the most important among them is the late James C. Self; his long-time close associate, John B. Harris, now chairman of the board of Greenwood Mills; and James C. Self, Jr., its president. Cross feels that the splendid mills these men have built up and kept in top-notch productive condition in the Greenwood area are the essential heart of the sales organization he heads in New York.

A Service Business

The emphasis on quality cloth which is the basis of the Greenwood manufacturing operation dovetails perfectly with Cross's business philosophy which, he says, is first to be assured that you have a quality product and then go out and find buyers for it at a fair price. And he is equally proud of the team of salesmen he has built up and trained in his methods both in New York and elsewhere throughout the country where Greenwood has its sales offices.

The business philosophy which Cross imparts to the younger men on his staff, and indeed in his many talks before textile groups over the past few years, he sums up in these words: "Textiles", he says, "is first and foremost a service business. All we have to sell is our ability to produce fabrics. The closer we come to producing the goods wanted by our customers, the better we do.

"It is not the function of Greenwood salesmen to outguess the market. We do not speculate in the goods our mills produce. We know what our fabrics cost and we try to sell them at a profit when our customers want to buy them".

"Greenwood's mills", he adds, "are instruments of service. And we try hard to make fabrics of such outstanding quality that it is difficult for our competitors to duplicate them at Greenwood's prices".

A long useful life in the American fabric market has given Marvin Cross a redoubled respect for the prin-

ciples with which he started as a boy. They are a determined willingness to work hard, to give willingly to an employer more than is asked, and in his words, to "expose oneself to opportunity".

How Cross exposed himself to opportunity is illustrated in an anecdote that goes back many years to the beginnings of his own career. When he was a young man working as a fledgling salesman for Wellington Sears, he realized that he would be able to give more service to the firm's customers and bring in more business if he knew more about the technical side of fabrics, how they are designed and how designs are translated into fabrics on the loom. He hungered for this kind of technical knowledge, but the question was how to get it?

Private Lessons

At that time there was working for Wellington Sears, a textile salesman who had an extensive technical and mill background. He was a Harvard man who had also graduated from Lowell Textile Institute, and had worked at one time as the overseer of a New England mill. Whenever they had a chance to chat, Cross asked this man questions about fabric constructions and mill procedures. One day this man offered to tutor him after hours in the fundamentals of fabric design. The fee he asked for his lessons was \$12 a week. Although Cross was earning only \$25 a week at that time, he eagerly accepted. For 18 months his fellow salesman tutored him in textile technology and Cross eagerly learned—knowledge he says now that proved invaluable to him then and in later years. The money he paid his tutor—half his salary—was, he says, the hardest money he ever spent, but the money that gave him the greatest return.

To close this account of the career of Marvin Cross, textile merchant, perhaps no better words can be found than the advice he himself gave to young textile salesmen in a talk he made several years ago when the Textile Veterans Association honored him with an award. Here is what he said:

"It is normal for most of us to think that the part of a business we are in is the most important; and I think this is as it should be; otherwise, we would not have the enthusiasm that this feeling generates—and if you are in the selling and merchandising end as I am, this enthusiasm is so important. If you do not have it, you cannot impart it to others. So, if you are going to sell, you had better start out with a strong desire to sell.

"And if you are going to sell, what is the first step?—Be sure you are with a good company with a good product. A good product has made many a salesman look good.

"How do you start? Learn your product so that you know its qualities and can talk intelligently about it. But the first thing you should try to sell is yourself.

"If you are going to build a continuing business, the buyer must first have confidence in you. I think you can best build this confidence by being honest. When you don't know the answer, admit it—but find out. You can destroy more confidence with one wrong answer than you can build with 100 correct ones. Do not give an answer just because you think you are expected to know. Nobody knows all the answers, and to admit it, gives more confidence in the statements you do make.

"Be sincere—study the other fellow's problems and try to put yourself in his place. If you are fair and he is fair, you won't have to give anything away.

"Then sell your company. Sure, you are going to lose some orders—nobody gets them all. But remember that customers are harder to get than orders. Many times it pays to lose an order—it can make a better customer for you.

"Sell What Is Wanted"

"Sell your company—give service—try to have what is wanted. It is a lot easier to sell what is wanted than what you want to make—but also try to anticipate his needs. Keep him informed as to what your company is doing to better serve him—but if you do not have confidence in your company, get with another.

"Until you have developed these steps, you won't have a customer. You will get some orders when goods are scarce or your price is low, but you will lose out to the man who is closer to him. He will get the benefit of the cooperative effort—that extended helping hand that is so necessary in arriving at a mutually satisfactory deal. If you have sold yourself, the buyer will help sell your goods. If you haven't, you will be dealing at arm's length and will never get the preference, all things being even—and this is so important in a normal market.

"The best place to do all of this, is at your customer's desk—call on him—be alert—be interested and interesting—expose yourself to opportunities—they will find you easier and you will hear them knocking."

New Kind of Shuttleless Loom Demonstrated

LONDON—A new principle of shuttleless weaving and a new design of rapier loom are two developments recently announced to the British weaving trade. Professor J. Vincent, head of the textiles department at Manchester College of Science and Technology, has demonstrated a method of shooting a weft accurately across a loom without using a shuttle, air or water jet, or any type of carrier. The weft yarn is fed between the rims of two discs rotating at high speed. Thus propelled, the yarn follows a remarkably straight path. In a recent demonstration, 3s cotton count yarn was inserted through a 1¼-inch diameter ring six feet from the discs.

Although the weft insertion device is still in the experimental stage, this performance compares favorably with air and water jet methods, where maximum width of the loom is usually tied to about four feet (less with heavier yarns). One potential advantage of this system, according to the inventor, is that a

heavier yarn is handled more efficiently and requires less power. He foresees a commercial version on looms attaining a speed of 500 picks per minute.

In Yorkshire, technicians at Newsome & Spedding Ltd., blanket manufacturers, have built a rapier loom for blanket weaving. This unit is reported to be capable of offering up to 50% greater productivity than conventional blanket looms. One unit is at the moment engaged in commercial production; several others, incorporating improvements, are being built.

The first loom was constructed on an old Hattersley frame. Warp is taken from a beam in the usual way. The weft is taken from a supply of large, spliced cheeses, and inserted across the shed by a needle-tipped rapier. This rapier carries a weft yarn above and below itself, and a double weft supply permits the insertion of four picks simultaneously at a rate equal to 120 picks per minute. Small steel shuttles at each side of the loom weave a firm selvage.

TELLS WHERE NONWOVENS NEED IMPROVEMENT

SYNTHETIC FIBER NONWOVENS are not yet in a position to present a major challenge to traditional textile markets, according to Dr. Kenneth R. Fox, Vice President of Fabric Research Laboratories. Speaking at the 15th Plastics—Paper Conference of the Technical Association of the Pulp & Paper Industry, Fox said that successful textile materials represent a satisfactory combination of properties which produce good performance at a price attractive to the consumer. Fortunately, in conventional textiles there is room for compromise in properties within the confines of acceptability, he said.

With the current state of the art this is not true with nonwovens, according to Fox. Adequate strength usually means poor absorbency and a "papery" hand. Adequate softness or drape is accompanied by poor durability and general structural weaknesses. The very binders which are used to impart integrity to webs at the same time create other properties which are undesirable. These generalizations apply to one degree or another, Fox said, whether the nonwoven is a bonded or unbonded web, a synthetic fiber paper, or a needle-punched batt. In nonwovens the improvement of one property or characteristic seems inherently to impose another one that is significantly objectionable.

To be sure, there are a good many legitimate markets for the various types of nonwovens now available, Fox said, adding that improved product performance and lower cost could undoubtedly increase these. A potentially significant market for disposable materials certainly exists, he said, but currently many disposable nonwovens have enough undesirable qualities and carry a sufficiently high price tag to limit their use to applications where disposability is absolutely essential as, for example, in working with radioactive materials or in sanitary and surgical applications.

Fox outlined four areas in which he said intelligent research can broaden current markets and create new ones:

1. Fundamental studies of the engineering properties of nonwovens. The technology developed over the last twenty years in the engineering of textile structures has made possible major improvements. The same can be said for conventional paper products but such a technology is lacking for nonwovens. "Progress

in this area will mean years of fundamental research and there are few signs that support for this activity is forthcoming. Over the long run, however, it might be the most important thing that could be done to brighten the prospect for nonwovens."

2. Applied research and product development. With specific market targets there is a great deal that can be done to improve present nonwovens, Fox asserted. Studies of fiber surface morphology, binder technology, blending, and finishing methods are needed. Current methods of establishing web integrity can certainly be improved. And much greater emphasis should go into development of systems which in one step or continuous steps go from fiber to end product (such as, for example, a bra cup) rather than from fiber to a fabric which must then be assembled into an end item. For really significant increases in nonwoven fabric consumption, however, Fox feels that "technological breakthroughs" will be needed.

3. Production technology. The prospect of turning out textile-like nonwovens at the speeds of paper-making equipment has created considerable excitement, undoubtedly with much justification, Fox noted. Certainly efforts in this direction should be continued. But efficient operation at high speeds means, logically enough, that there must be sizable markets. As yet there is not a good indication that demand—even at the lower costs which high speed production will make possible—will support the production. Greater production efficiencies must be accompanied by improved product characteristics or they will largely be wasted.

4. Fiber Development. The biggest single boom for the field of nonwovens would be, according to Fox, the development of a low-cost manmade fiber with simulated felting properties—something priced in the range of cotton or even the anticipated range of polypropylene. The felting properties of wool, in the price range of cotton, could put nonwovens in a position to compete quality-wise and price-wise (relatively speaking in both cases) with a good many conventional textile materials. No such fiber is known to be even in the experimental stage but if and when one is developed it will do much to make nonwovens a major industry, he concluded.

Mosely Joins Celanese

George B. Moseley has been appointed vice president-marketing of Celanese Corp. of America, a newly established corporate position. Before joining Celanese, Mosely had been vice president for sales of Chase Brass & Copper Co., Waterbury, Conn.

In announcing the appointment, Harold Blancke, Chairman, said that the position had been established to assure effective coordinated marketing of the expanding group of Celanese chemicals, fibers, plastics and polymers in light of currently active corporate diversification.

Recent diversification projects include the enlargement of Celanese petrochemical production capacities and addition of polyester and nitril fibers, plastic bottles and containers and polyethylene film for packaging.

Normal operating procedures in the four Celanese divisions will continue as in the past, with respect to sales and marketing procedures and customer relations.

Metallic Fashions Popular

A number of southern mills are planning to enter the field for metallic brocades and jacquards, mostly in silk, for Fall 1961, according to Metlon Corp. Some of the mills involved are upholstery fabric producers who are planning to use lighter weight yarns suitable for dress and coat fabrics, with synthetic fibers substituted for the silk. Metlon is working closely with these companies to incorporate some of the basic metallic yarn patterns in these constructions.

The interest of mills in metallic brocades and jacquards has been greatly stimulated by the popularity of these fabrics in expensive dresses displayed in pace-setting stores in New York during the past winter and by the popularity of these dresses with women who are fashion leaders. With the impetus of such authoritative fashion approval, it is expected that these novelty brocades and jacquard dress fabrics will be in strong demand in the popular-priced dress market in coming months.



NEWS AND COMMENT

New Bulletin on Written Contracts

The Textile Distributors Institute last month issued a new bulletin, No. 2270, regarding the use of written contracts. The new bulletin is entitled "Foresight Is Better Than Hindsight—Written Contract Provisions." The verbatim text of the bulletin is as follows:

"Notwithstanding our repeated Bulletins to our members concerning the use of written contracts and the acceptance of customers' purchase orders containing extremely harsh provisions (our most recent Bulletin being No. 2265 issued last month), some of our members continue to be careless. After claims are made against them on transactions where no written contract was used or where they delivered against a customer's purchase order which had extremely harsh terms on the reverse side, the distributor looks for help. Usually, it is then too late. In this kind of competitive market, written contract terms are increasingly more important. Where your margins are lower an unreasonable contract provision enforced by your customer may be the difference between a profitable sale and an unprofitable sale.

"Our attorneys, Weil, Gotshal & Manges, have again reviewed this situation for us and have furnished us with the instruction set forth below:

"If you want to protect yourself before trouble develops, please remember:

"If you do business without a written contract with your customer you have no clearly defined understanding covering deliveries, payments, merchandise disputes, arbitration and numerous other provisions which should be clearly agreed upon between the parties before a purchase and sale takes place.

"TDI has spent a great deal of time in attempting to prepare a recommended form of finished goods contract which is fair to both buyer and seller and which, because of its use by so many concerns, is well understood by everyone in the trade. If you want to have the terms of this recommended finished goods contract apply to your sales, make sure that your customer signs your contract before you make any deliveries against it. If you sign and send your finished goods contract to your customer and he does not sign it but, instead, returns to you his purchase order form which has different terms and provisions, and you then make shipment without doing anything further, you have an ambiguous situation which can only end up in trouble for everyone concerned if there is any later dispute or question.

"If your customer sends you his purchase order form before delivery and you decide you do not want to be subject to the terms of that purchase order form, you should sit down with the customer before any shipment is made and reach a conclusion as to whether the terms of the form of contract you sent him are to apply or whether the terms of his purchase order which he sent are to apply.

"A situation has arisen where a distributor and his customer both signed the distributor's form of contract but the customer in furnishing the distributor with assortments and/or delivery instructions submitted these assortments and delivery instructions on the customer's purchase order form which has contract clauses directly opposite to those on the

original finished goods contract which both parties signed. If this should happen to you, we suggest:

'(a) before making delivery write the customer that you acknowledge his assortments, etc., which he has made and which you have received "pursuant and subject only to all of the terms and conditions of your Contract No. _____, dated _____, and we will make delivery accordingly," or

'(b) in the alternative and if you have an order form which has the same terms and conditions on it which you have on your finished goods contract, which the customer signed, you can acknowledge the assortments and shipping instructions on such order form.

"If a customer gives you his assortments and shipping instructions on the telephone, or orally, or even if he gives them to you in writing in any form which does not contain terms or conditions different from those of the contract which you and he signed, in the interests of orderly business procedure we recommend that you furnish him with written acknowledgment of receipt of his assortments, shipping instructions, etc., again using the precise wording set forth above under paragraph "3 (a)".

"In order to make the terms of your finished goods contract crystal clear to your customers, the Board of Directors has approved the following additions to be made in the Recommended Finished Goods Contract of the Institute:

"1. Insert the following words immediately after the word "order" in the last line on the face of the contract:

"regardless of when dated or received"

"2. Add the following sentence at the end of the last paragraph on the face of the contract: "Any assortments or shipping instructions, whether oral or in writing, involving the above described goods, and irrespective of any terms or provisions thereof, shall be deemed subject to all the terms and provisions of this contract unless agreed otherwise in writing by the parties."

Copies of the Institute's Recommended Finished Goods Contract, containing the amendments given above are available at the Rooms of the Institute, 469 Seventh Ave., New York 18, N.Y.

French Fabrics' New Address

French Fabrics Corp. last month moved to its new office and general headquarters at 460 Park Avenue South, New York 16, N. Y. The firm's telephone number is MU. 4-3900.

'Sure Care Symbols'

The National Retail Merchants Association has developed "Sure Care Symbols," designed for permanent attachment to textile products. The NRMA symbols will provide consumers with a quick and simple reference on whether and how to wash, iron or dry clean an item, and they may also replace the instruction tags now in use. The NRMA public relations committee is now involved in an intensive information program aimed at stimulating such groups as garment manufacturers, fabric producers, soap and washing machine makers, to either affix the symbols on textile products or to distribute "Sure Care Symbol" charts to consumers.

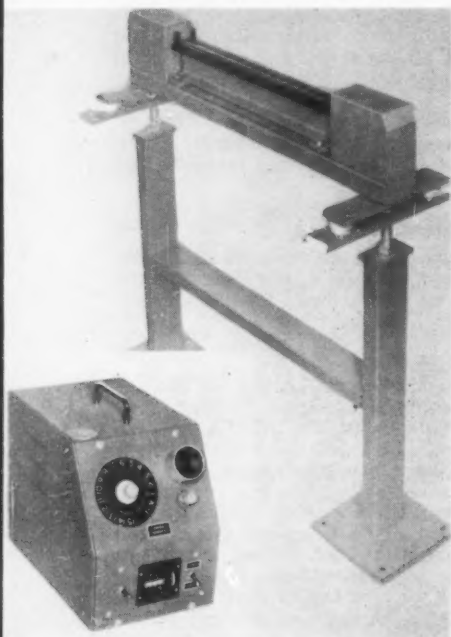
NEW Equipment Machinery

Lindly Electrotense

Lindly & Co. has announced further improvements in its Electrotense, the electro-magnetic tension device it introduced in 1958. To obtain still further uniformity of tension, new super flat tension discs were designed. The lower disc of the Electrotense is rotatable, and in most instances, it rotates slowly of its own accord. To obtain a delicate control of tension, especially in handling the finer yarn sizes such as 15 denier, Lindly makes available three sizes of top discs in 115, 45 and the very light 23 grain weights. The unit, at the maximum of 50 volts consumes only 1½ watts of power, thus making for cooler, safer operation without danger of yarn damage. *For further information write the editors.*

Better Warp Yarn Inspection

The Detect-All Mark II, an electronic device manufactured by Fabronics Corp., is said to make warp yarn inspection so accurate that it virtually eliminates quality control problems in the warping operation. The device is designed for use as an accessory with the Fabronics warp yarn monitor, a photo-electric yarn defect detector. The Detect-All detects and counts linear defects and end breaks and stops the warper for their removal. A feature of the system is a cathode ray oscilloscope, which continuously monitors detector signals on its screen so that the operator can identify and remove the sources of interference.



Circular Carpet Knitter

Paper carpet scrim, carpet backing and carpeting are now being circular knit on two new spring needle circular knitting machines manufactured by Tompkins Bros. Co. 15-foot wide material is knit on a 70-inch cylinder diameter machine and 12-foot wide material is knit on a 54-inch cylinder diameter unit.

The accompanying picture shows the new 54" cylinder machine knitting carpet scrim with non-stretch paper yarn. Loops are tightly tied down to the outside of the mesh or basic web of the fabric, using a construction similar to heavy fabric knitting. The fabric moves upward uniformly without objectionable spiral or fabric distortion to a take-up roll.

Both new machines utilize standard Tompkins parts and the knitting principle first introduced on the firm's machines in 1846. Each individual end of yarn is controlled by two separate stop motions. Both size units, it is claimed, have been producing carpet, carpet backing and carpet scrim at faster speeds and at lower costs than previous methods.

Rotary Cutter-Winder

H. W. Butterworth & Sons has issued a new 4-page bulletin describing its automatic rotary cutter-winder. The machine operates in conjunction with seam detector, yardage meter and pre-set yardage control. The bulletin illustrates typical winding set-ups. Butterworth reports the machine saves the refinishing of up to 50 yards of material that may be soiled in completing one roll and beginning another. *For copies of the bulletin (903B) write the editors.*

Dyeing-Washing Machine

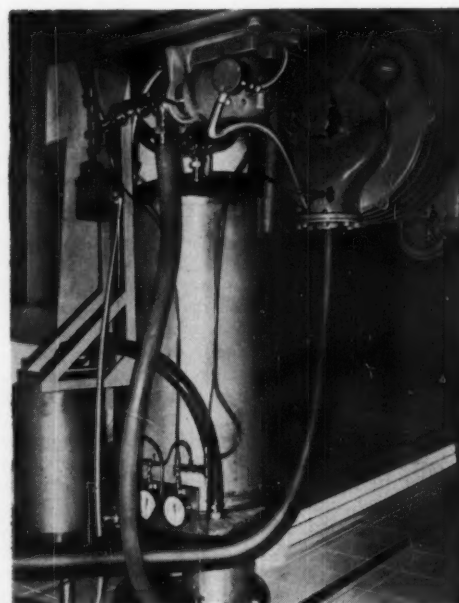
Venango Engineering Co. has developed a combination dyeing and washing machine. The unit is based on the rotary dyeing machine principle except that the cylinder is of the open pocket type. A variable speed drive allows the speed change necessary in the cylinder movement to provide the additional agitation required for washing action. Venango states that the unit provides flexibility for the washing cycle and dyeing or bleaching cycle in subsequent operations without any handling being required in between processes. Because of this dual function it is expected to be of use to sweater dyers and hosiery wet processors. *For further information write the editors.*



Tompkins new 54 inch diameter circular knitting machine

Chemical Feed System

A compact chemical feed system, with applications in the textile, plastic, resin, leather, rubber, dye-stuff, chemical, leather, and paper industries, has been developed by Curlator Corp. The package unit, made of stainless steel and non-corrosive materials, has a main reservoir mixing tank, sanitary circulating pump, full flow filter, constant level feed tank, drains and by-pass valves. The system may be installed in conjunction with Curlator's Rando-Bonder or other processing line or chemical compounding equipment.



Curlator's new compact chemical feed system described above

Morrill Heads AATCC

Elliott Morrill has been elected president of the American Association of Textile Chemists and Colorists for 1961. Elected as regional vice presidents were: Dr. W. George Parks, for New England; William S. Sollenberger, for Central Atlantic; A. Henry Gaede, for the Southern, and Joseph H. Jones, for the Western.

Morrill, plant manager of the Indianapolis, Ind., plant of Corn Products Co., is chairman of the AATCC committee on conventions. He formerly was employed by Ciba, Geigy and Sandoz.

Parks is Professor of Chemistry, University of Rhode Island. William S. Sollenberger is assistant head, dyeing and finishing division, Technical and Textile Services Department, of American Viscose Corp. Gaede is the southern representative of the Laurel Soap Manufacturing Co., and Jones is general manager of Phoenix Dye Works.

New Fancourt Plant

W. F. Fancourt Co., Philadelphia textile chemical manufacturer, has sent out bid invitations to contractors for a new 3-story plant it will build on a recently purchased 10-acre plant at Greensboro, N. C. Construction is slated to start early this year with completion anticipated in August. The 22,000-square foot plant will supplement the firm's laboratory and manufacturing operations in Philadelphia and will incorporate executive offices now maintained in Burlington, N. C.

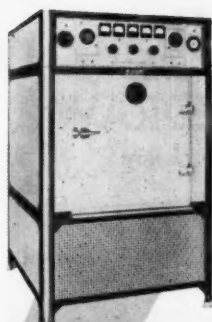
New Putnam Appointments

Putnam Chemical Corp. will be represented in the New England area by Tanners Dye & Chemical Corp. Tanners is headed by Harry D. Sentkowski. Putnam, which represents Badische Anilin & Soda Fabrik, of Ludwigshafen, West Germany, also made the following appointments:

W. J. Ratcliffe as sales manager for the New England territory, with headquarters in Beacon, N. Y.; Richard Kopp as technical sales representative, concentrating particularly in the field of package dyeing; and Paul Lindley as a sales representative with headquarters at Putnam's Charlotte, N. C., office.

Vat Dyeing Brochure

General Dyestuff Co. has issued a 120-page brochure on the latest vat-dyeing techniques for cellulosic fibers. Entitled "Indanthrene Dyestuffs on Cotton Piece Goods," the brochure covers the complete field of vat dye applications. It also contains dye property tables and a complete vat dye index with both company trade names and color index generic names and numbers. *For free copies write the editors.*



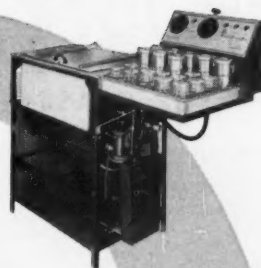
WEATHER-OMETER®

Reduces years of the deteriorating effects of outdoor exposure to sunlight, rain and thermal shock to a short laboratory test. Priced \$2735.00 up.



FADE-OMETER®

Simulates exposure to Sunlight with controlled humidity in alternate cycles of light and dark, producing a quick accurate test of fading qualities. Price \$1350.00 up.



LAUNDRY-OMETER®

The standard test machine of the A.A.T.C.C. for determining the color fastness, shrinking, washing and dry cleaning qualities of textiles. Price \$875.00.

Atlas-Ometers

Used all over the world for accelerated testing of textiles and dyestuffs, for colorfastness and wearing characteristics due to light, washing, weathering, abrasion, perspiration, etc. Required in many A.A.T.C.C. and A.S.T.M. test programs and Government specifications.

ATLAS ELECTRIC DEVICES CO.

4114 N. Ravenswood Ave.
Chicago 13, Illinois, U. S. A.



ACCELERATOR®

Developed by the A. A. T. C. C. for evaluating wet and dry abrasion resistance of fabrics. Price \$485.00.



RANDOM TUMBLE PILLING TESTER

For the fast determining of the pilling and fuzzing characteristics of all types of fabrics. Price \$485.00 to \$890.00.



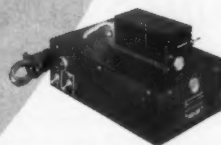
PERSPIRATION TESTER

For testing color fastness to perspiration and water. A. A. T. C. C. test methods 15-1960 and 63-1957. Price \$41.00.



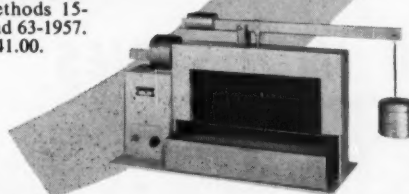
A.A.T.C.C. CROCKMETER

For determination of color fastness to crocking. \$42.50 to \$55.00.



SCORCH TESTER

Standard A.A.T.C.C. tester for damage caused by retained chlorine in fabrics. Price \$230.00.



LABORATORY WRINGER and PADDER

For extracting controlled amounts of liquids to produce test specimens as required by many textile test programs. \$255.00.

FLETCHER

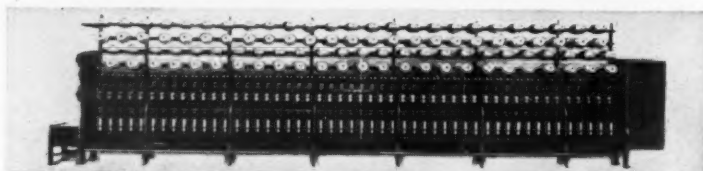
high speed WINDER REDRAW FOR GLASS AND SYNTHETIC YARNS



Here's the most modern redraw machine, Fletcher-engineered to give you top production.

- Vibration free operation
- Perfect wound bobbins at higher speeds
- Cleaner yarn because of no lubrication in the yarn area
- Three styles of bobbins, all sizes
- Higher speeds. 500 to 750 ypm on 2-pound bobbins.
- Pirns, bottle bobbins and Spools

TRY BEFORE YOU BUY with 3-month trial rental plan

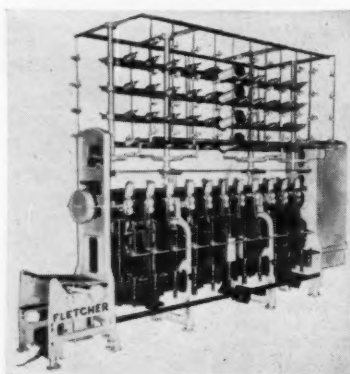


The MASTER DUPLEX Unsurpassed for glass fibers

New precision-built machine has speeds up to 9,000 rpm doubling, twisting and novelty for all yarns—glass, synthetic or natural.

FLETCHER BIG 6 POUND PACKAGE JUMBO DUPLEX DOUBLER TWISTER

Six pounds of continuous twisted and double high quality glass, textured, synthetic and cotton yarns. Bottle Bobbin, Straight or Tapered Pirn Package. 22-spindle and 72-spindle 6" ring. 9-inch and 10-inch traverse.



FLETCHER INDUSTRIES

Hasbrook Avenue and Beecher St., Cheltenham, Pa.

FLETCHER SOUTHERN

FLETCHER INDUSTRIES

SOUTHERN PINES, N. C.

STATESVILLE, N. C.

TEXTILE — NEWS BRIEFS

New Heresite Latex Coating

Heresite & Chemical Co. recently announced the development of a new synthetic rubber coating which is now ready for application on a commercial basis. The new coating is being marketed under the name "Herecrol RC-31" rubber coating. It is said to be especially resistant against strong alkalis and also is said to be immune against attack of certain acids.

The RC-31 coating is a pigmented synthetic rubber latex with outstanding toughness, resilience and flexibility. The latex base for this material is produced by a patented process to rigid specifications. According to the manufacturer, excellent chemical resistance to sodium hydroxide, ammonium hydroxide and potassium hydroxide is provided by this new Herecrol RC-31 latex coating. Available colors are gray or white, shipped in five gallon open top pails. Complete details, including application instructions, are available in Bulletin 104 from the Heresite & Chemical Co., Manitowoc, Wisconsin, or its eastern warehouse at Woodbridge, N. J.

Bentele Now Rusch Partner

Rusch & Co. has admitted C. W. Bentele to the firm as a general partner as of December 1, 1960. Bentele, with Rusch since 1949 as comptroller, is a certified public accountant. Rusch & Co. has been in the factoring field in New York since 1827.

Art of Oriental Rugs Dying?

Within 30 years or so the making of hand-knotted oriental rugs in Iran (Persia) may come to an end, according to an article in the Nov. 15 issue of "Holiday", a magazine published by Curtis Publishing Co. The article reports that the supply of low-priced labor needed to make these carpets is drying up because of economic changes leading to industrialization in Iran. The long history of oriental rug making is traced in the article and some of the characteristics of fine oriental rugs are summarized.

Sonoco Safety Award

Harold Hurst was the top prize winner in the "Safety Kitty" contest which climaxed one million man-hours without a lost-time accident at Sonoco Products Co. He won a new car. Sonoco's idea of a "Safety Kitty" was started in 1953 as an effort to promote safety to all employees.

MODERN TEXTILES MAGAZINE

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in January 1961. All prices are given to change without notice.

CELLULOSIC YARNS ACETATE

American Viscose Corp.

Current Prices Effective March 22, 1960

Denier & Filaments	Intermediate Twist**			Spinning Twist		
	Cones	Twister T-Tubes	Warps	Cones & C-Tubes	Warps	
40/11	.....	.....	.....	.....	\$1.14	
45/14	.....	.....	.....	.....	1.03	
55/14-20	.99	.97	1.00	.93	.87*	
75/18	.....	.....	.....	.....	.90	
75/20	.95	.93	.96	.89	.90	
100/28	.91	.89	.92	.85	.86	
120/32	.82	.80	.83	.76	.77	
150/36	.....	.....	.....	.....	.70	
150/41	.74	.73	.75	.69	.70	
200/54	.70	.69	.71	.66	.67	
240/80	.....	.....	.....	.....	.66	
300/80	.66	.65	.67	.62	.63	

* Tricot Spools Only.
** Standard Twist 2 $\frac{1}{2}$ Additional.
Terms: Net 30 Days.

Celanese Fibers Company

Current Prices Effective March 22, 1960

Acetate Filament Yarn Prices

Denier and Filaments	Intermediate Twist			Spinning Twist		
	4 & 6-Lb. Cones	Beams	Cheeses	Cones	Beams	O Twist Tubes
45/13	\$1.12	\$1.13	.....	.....	\$1.03*	.82
55/15	.99	1.00	.....	.....	.87*	.82
75/20	.95	.96	.....	.89	.90	.68
75/50	.97	.98	.....	.....	.92	.....
100/26-40	.91	.92	.....	.85	.86	.....
120/40	.82	.83	.....	.76	.77	.....
150/40	.74	.75	.74	.69	.70	.....
200/52	.70	.71	.....	.66	.67	.....
240/80	.68	.....	.....	.64	.....	.....
300/80	.66	.67	.....	.62	.63	.....
450/120	.66	.67	.....	.62	.63	.....
600/160	.65	.66	.....	.....	.....	.....
900/240	.63	.64	.....	.....	.....	.....

* Tricot beams only. This item with Permchem—\$.05 additional.
3T/10 electrical finish available at no premium.
3 to 5 turns on Cones or Beams \$.02 Additional
Over 5 turns—55 denier \$.06 Additional per Turn
Over 5 turns—75 denier \$.04 Additional per Turn
Over 5 turns—100 denier \$.03 Additional per Turn
Over 5 turns—150 denier & coarser \$.02 Additional per Turn
150 Denier 12-Tw Tubes \$.73
3 Pound Cheeses \$.01 Less than 4-lb. Cheeses
2-BU and 4-BU Tubes Same price as 4 & 6-lb. cones
Premium for Serving Tubes \$.05
Part Cone Premiums: 2-lbs. \$.05
1-lb. \$.10
Under 1-lb. \$.20

Celaperm Filament Yarn Prices

Denier and Filaments	Intermediate Twist			Spinning Twist		
	4 & 6-Lb. Cones	Beams		Cones	Beams	
55/15	\$1.17	\$1.18		\$1.31	\$1.32	
75/20	1.34	1.35		1.28	1.29	
100/28	1.28	1.29		1.22	1.23	
120/40	1.19	1.20		1.13	1.14	
*150/40	1.11	1.12		1.06	1.07	
200/104	1.05	1.06		1.01	1.02	
300/80	1.01	1.02		.97	.98	
450/120	.99	1.00		.95	.96	
600/160	.97	.98		.....	.....
900/240	.94	.....		.....	.....

* 150/22/40 available in all colors. Contact our District Sales Representative for current availability of colors in other denier.
Over 5 turns—55 denier \$.06 Additional per Turn
Over 5 turns—75 denier \$.04 Additional per Turn
Over 5 turns—100 denier \$.03 Additional per Turn
Over 5 turns—150 denier & coarser \$.02 Additional per Turn

Celaperm Black Yarn Prices

Effective March 22, 1960

Denier and Filaments	Intermediate Twist			Spinning Twist		
	4 & 6-Lb. Cones	Beams		Cones	Beams	
55/15	\$1.17	\$1.18		\$1.11	\$1.12	
75/20	1.14	1.15		1.08	1.09	
100/26	1.08	1.09		1.02	1.03	
120/40	.99	1.00		.93	.94	
150/40	.91	.92		.86	.87	
200/52	.85	.86		.81	.82	
300/80	.81	.82		.77	.78	
450/120	.79	.80		.75	.76	
600/160	.77	.78		.....	.....
900/240	.74	.....		.....	.....

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Acele" Acetate Bright & Dull

Denier & Filament	Zero Twist		Low Twist		Intermediate Twist		Bms.
	Tubes	Beams	Cones	Beams	2 & 4 Lb. % Tbs.	4 & 6 Lb. Tw. Tbs.	
45-13	\$.94	\$1.02	.....	.....	.....	.....
55-18	.82	.86	.....	.....	.....	.....	\$.99
55-24	.82	.86	.....	.....	.....	.....	1.00
75-24	.86	.89	.....	.....	.....	.....	.95
75-50	.....	.....	.....	.....	.....	.....	.97
100-32	.82	.85	.....	.....	.....	.....	.91
120-50	.73	.76	.....	.....	.....	.....	.82
150-40	.66	.69	.....	.....	.....	.....	.75
200-60	.65	.66	.....	.....	.....	.....	.70
240-80	.....	.65	.....	.....	.....	.....	.69
300-80	.60	.62	.....	.....	.....	.....	.66
450-120	.61	.62	.....	.....	.....	.....	.66
600-160	.....	.62	.....	.....	.....	.....	.65
900-44	.....	.....	.....	.....	.....	.....	.....
900-240	.61**	.....	.....	.....	.....	.....	.63***
1800-88	.....	.....	.....	.....	.....	.....	.61***
2700-132	.....	.....	.....	.....	.....	.....	.61***
3000-210	.....	.....	.....	.....	.....	.....	.61

1800 Type 20 only.
(B) 1 lb. % Tubes—add \$.02 to 2 & 4 lb. % Tube Price.
** Bright only 2" Tubes.
*** Type 20 only.

Color-Sealed

Denier & Filament	Zero Twist		Low Twist		Intermediate Twist	
	Tubes	Beams	Cones	Beams	Cones	Beams
75-24	\$1.18	\$1.28	.....	.....	\$1.34	\$1.35
100-32	1.14	.....	.....	1.23	1.28	1.29
150-40	1.03	1.06	1.06	1.07	1.11	1.12
300-80	.....	.97	.....	.....	1.01	1.02

Black

Denier & Filament	Zero Twist		Low Twist		Intermediate Twist	
	Tubes	Beams	Cones	Beams	4 & 6 Lb. Tw. Tbs.	Cones
55-18	\$1.045	.....	.....	.....	.....	\$1.17
75-24	.98	\$1.08	.....	.....	.....	1.14
100-32	.94	.....	.....	1.03	1.06	1.08
150-40	.83	.86	\$.86	.87	.91	.91
200-60	.....	.....	.....	.....	.85	.85
300-80	.75	.77	.77	.78	.81*	.81
900-44	.....	.....	.....	.....	.74*	.74

* 2 & 4 lb. % tbs. is same price as 4 & 6 Tw. Tbs.

Specialty Yarns Cycloset for Tricot

	Tubes		Beams	

40-13 Natural	\$1.07	.....	\$1.14	.....
55-18/24 Natural	.83	.....	.87	.....
75-24 Natural	.87	.....	.90	.....
100-32 Natural	.83	.....	.86	.....
40-13 Black	1.22	.....	1.29	.....
55-18 Black	1.08	.....	1.12	.....

Terms: Net 30 days. Subject to changes without notice.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.
* Dupont's Trademark for its acetate yarn.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Current

"Estron" Yarn, Bright or Dull — White

Denier & Filament	Regular Twist		Intermediate Twist		Low Twist		Zero Twist		Tricot Beams	
	Cones	Beams	Cones	Beams	Cones	Beams	Tubes	Spun Twist	Zero Twist	Beams
55/13	\$1.01	\$1.02	\$0.99	\$1.00	\$0.93	\$0.94	\$0.82	\$0.87	\$0.86	.....
75/19	.97	.98	.95	.96	.89	.90	.....	.90	.....	.....
75/49	.99	1.00	.97	.98	.....	.....	.....	.....	.....	.....
100/25	.93	.94	.91	.92	.85	.86	.....	.....	.....	.....
120/30	.84	.85	.82	.83	.76	.77	.....	.....	.....	.....
150/38	.76	.77	.74	.75	.69	.70	.68	.....	.....	.....
200/50	.72	.73	.70	.71	.66	.67	.....	.....	.....	.....
300/75	.68	.69	.66	.67	.62	.63	.60	.....	.....	.....
450/114	.68	.69	.66	.67	.62	.63	.....	.....	.....	.....
600/156	.67	.68	.65	.66	.62	.63	.....	.....	.....	.....
900/230	.65	.66	.63	.64	.....	.....	.61	.....	.....	.....
Heavier	.....	.....	.....	.....	.....	.....	.56	.....	.....	.....

How
2 frames
in
5 months
30,000*
"sold" **A-W** Rings

to a well known Alabama mill

Reordering 30,000 after 5 months' test on 2 frames, this mill summarizes . . .

- "best rings we've ever started"
- "some reduction in ends down"
- "traveler consumption shows savings"
- "yarn evenness checks up better"
- "a generally smoother running"

***ANTI-WEDGE**

The Spinning Ring of the Future



For Best Performance
 with
 Elliptical Travelers

Anti-Wedge
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Much larger
 bearing area
 with controlled
 micro-inch
 finish.

The only ring
 design that
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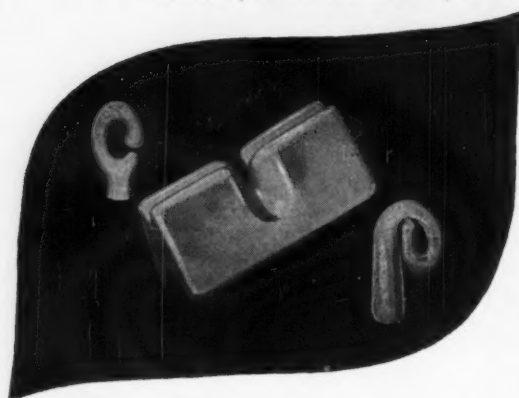
Request
ANTI-WEDGE
 Bulletin →



WHITINSVILLE (MASS.)
SPINNING RING CO.
Makers of Spinning and **DIAMOND FINISH** *Twister Rings since 1873*

Rep. for the Carolinas & Va.: W. K. SHIRLEY, P.O. Box 406, Belmont, N. C.
 Rep. for Ala., Ga. & Tenn.: H. L. WILLIAMS, Box 222, West Point, Ga.

Nothing is impossible
 unless you have to do it yourself.



We who manufacture

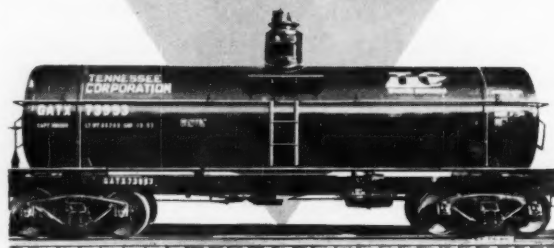
LAMBERTVILLE THREAD GUIDES

can't make a guide that lasts forever. We can and do produce long wearing dimensionally accurate guides that give the most economical and satisfactory service. Available in white or 'Durablu' finish. Write for catalog and samples.

Lambertville Ceramic
 AND MANUFACTURING COMPANY
 LAMBERTVILLE, NEW JERSEY

LAMBERTVILLE: YOUR GUIDE TO BETTER OPERATIONS!

SULFURIC ACID



A BASIC PRODUCER FROM MINE TO FINISHED PRODUCT
 SERVING THE GREAT SOUTHEAST

The Sulfur contained in our ore yields Virgin Sulfuric Acid of highest quality — We produce all grades and strengths of Sulfuric Acid from 60° Baume through all the various Oleums.

Call Jackson 3-5024, Atlanta, Ga., or write:



TENNESSEE CORPORATION
 612-629 Grant Building, Atlanta 3, Georgia



Current

"Chromspun"—Standard Colors (Except Black)

Denier & Filament	Regular Twist Cones	Regular Twist Beams	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams
55/13	\$1.39	\$1.40	\$1.37	\$1.38	\$1.31	\$1.32
75/19	1.36	1.37	1.34	1.35	1.28	1.29
100/25	1.30	1.31	1.28	1.29	1.22	1.23
150/38	...	...	1.11	1.12	1.06	1.07
300/75	...	...	1.01	1.02	.97	.98
450/114	...	...	.99	1.00	.95	.96
900/230	...	...	.94	.95	...	...

Current Prices

"Chromspun"—Black

Denier & Filament	Regular Twist Cones	Regular Twist Beams	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams
55/13	\$1.19	\$1.20	\$1.17	\$1.18	\$1.12	\$1.13
75/19	1.16	1.17	1.14	1.15	1.09	1.10
100/25	1.10	1.11	1.08	1.09	1.03	1.04
150/38	.93	.94	.91	.92	.87	.88
200/50	.87	.88	.85	.86	.82	.83
300/75	.83	.84	.81	.82	.78	.79
450/114	.81	.82	.79	.80	.76	.77
900/230	.76	.77	.74	.75	...	...

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Eaton" is a trade-mark of the Eastman Kodak Company.

* Chromspun is a trade-mark of the Eastman Kodak Company.

RAYON

American Bemberg

Current Prices

Regular Production Reel Spun Yarn

Den/Fil	No Turn Skeins	Turned* & Cones	8 1/2 Turns	12 Turns	15 Turns	18 Turns
40/30	\$1.49	\$1.95	...	...	...	\$2.08
50/36	1.29	1.55	...	...	...	1.85
65/45	1.22	1.38	...	\$1.61	...	1.66
75/60**	1.11	1.25	...	1.48	\$1.53	1.56
100/74**	1.02	1.15	...	1.40	1.45	1.51
125/90	1.01	1.12	\$1.16	1.37	...	...
150/120	.99	1.08	1.18	1.33	...	...
300/225	...	1.01	...	...	1.14	...
900/744	...	.91	...	...	...	...
1800/744	...	.91	...	...	...	...

* Turn includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.

** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"44" HH Spool Spun Yarn

Den/Fil	No Turn Tubes	No Turn Beams	5 Turn Cones	5 Turn Beams	12 Turn Cones	12 Turn Beams	15 Turn Cones	15 Turn Beams
40/30	\$1.35	\$1.35	...	...	...	...	...	...
50/36	1.05	1.05	...	...	...	...	...	...
65/45	1.13	...	...	...	...	\$1.50	...	...
75/45*	1.04	...	\$1.15	\$1.15	\$1.38	1.38	\$1.46	...
100/60*	.98	...	1.10	1.10	1.30	1.30	1.38	...
125/90	.91	...	1.06	1.06	...	...	...	...
150/90*	.83	...	.87	.87	1.21	1.21	1.30	...
150/120	.87	...	.99	.99	...	...	...	...

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

"44" HH "Parfe" Spool Spun Yarn

Den/Fil	No Turn Cones	5 Turn Cones	5 Turn Beams	12 Turn Cones	15 Turn Cones
50/36	\$1.60	\$1.85	\$1.85	...	...
75/45	1.48	1.58	1.58	1.78	1.88
100/60	1.38	1.48	1.48	1.68	1.78
150/90	1.21	1.28	1.28	1.63	1.73
300/120	1.21	1.28	...	...	...

Nub-Lite (Short Nubbi)

Code	Den/Fil	2 1/2 Turn Natural Cones	2 1/2 Turn Natural Cones*	5 Turn Natural Cones	5 Turn Natural Cones*
1515	160/90	...	...	\$1.50	\$1.40
1519**	155/90	...	...	1.50	1.40
2008	200/120	...	...	1.11	1.01
3002	315/180	\$1.15	\$1.05	...	...
4011	410/224	1.15	1.05	...	...
6001	600/360	1.13	1.03	...	...
8001	860/450	1.13	1.03	...	...

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.

** Code 1519 can be run in warp or filling.

CUPIONI Type B

Code	Den/Fil	2 1/2 Turn Cones	2 1/2 Turn Cones
9650	70/45	...	\$1.69
9660	100/60	...	1.53
1545	150/90	...	1.30
9730	285/135	...	1.15
9792	450/225	...	1.15
9814	600/372	...	1.12
9837	940/372	...	1.02

"Spun Dyed Cupracolor is spun 150, 285, and 940 deniers at 35¢ per pound extra. Cupracolor Black Comes in all deniers."

STRATA SLUB

Code	Den/Fil	Turned Cones	Price
9747	275/225	3 1/2	\$1.25
9798	450/372	2 1/2	1.15

9823	600/372	2 1/2	1.10
9847	980/372	2 1/2	1.02
9885	1290/372	1 1/2	1.00
9934	2680/744	1 1/2	1.00

"Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra."

FLAIKONA

Code	Den/Fil	Turned Cones	Price
9699	150/148	2 1/2	\$1.35
9769	300/224	2 1/2	1.35
9782	450/270	2 1/2	1.05
9809	600/360	2 1/2	1.05
9840	900/450	2 1/2	1.00
9924	2000/744	2 1/2	.95

"Spun Dyed Cupracolor Black 35¢ per pound extra."

Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

American Enka Corp.

Current Prices

Effective February 29, 1960

Standard Quality Yarns

Den./Fil.	Luster	Turns	Weaving		Skeins		Cakes	Kettling Cones
			Cones	Beams	Long	Short		
50/18	E	5	S	...	...	...	1.32	1.63
50/20	B	4	S&Z	...	...	...	1.32	1.64
75/10	B	3	S&Z	...	...	...	1.02	...
75/18	E	4	S	...	...	...	...	1.14
75/30	B	2.5,4S&Z	1.14	1.14	1.32	1.41	1.02	1.14
75/30	B	8	S	1.24	1.49	1.59	1.12	1.24
75/45	P,E	2.5,4,5S&Z	1.14	1.14	1.32	1.41	1.02	1.14
75/60	B,P	3,4	Z	1.16	...	...	1.04	...
100/14	B	12	S&Z	...	...	1.15	1.23	.90
100/40	B,P,E	4,5	S&Z	.98	...	...	...	1.29
100/40	B	6	S	1.17	...	1.34	1.44	.90
100/40	B,P	2.5,4S&Z	.98	.98	1.15	1.23	.90	...
100/60	B	4	S&Z	...	...	...	...	.90
100/60	E	2.5	S	1.00	1.00	...	...	.92
125/40	B,P	3	Z	.96	.96	...	...	.87
125/50	B,E	0	S	.745	...	...	...	...
150/40	B,P,E	2.1,3S&Z	.82	.82	.96	1.03	.78	.82
150/40	B,E	.90	5	S&Z	.90	1.15	1.25	.86
150/40	B,E	8	S&Z	.95	.95	1.20	1.30	.91
150/90	E	2.1	S&Z	.83	.83	...	...	.79
200/40	B	2.1	S	.81	.81	.94	1.01	.77
200/40	P	3	Z	...	...	.94	1.01	.77
250/60	P,E	2,4	Z	...	...	.93	1.00	.77
300/30	E	3	S	.81	.85	...	...	...
300/40	B	3,2	Z	.73	.73	...	...	...
300/50	B,E	3	S	.73	.76	...	...	...
300/60,120	B,P,E	2.1	S&Z	.73	.73	.82	.89	.71
300/60	B	3,5	S	.73	.73	.82	.89	.71
300/60	B	6	S	.86	.86	...	1.00	.84
300/120H.T.	B	2.5	S	.75	.75	...	...	.73
300/40H.T.	B	3,4	Z	.85	...	...	...	.83
450/60	B	3	S	.69	.71	...	...	.67
450/80	B,E	3	S	.69	.71	.78	.85	.67
600/80	B,E	3	S	.73	.75	...	...	...
600/120	B,E	3	S	.69	.71	.78	.85	.67
900/120	B	3,4	S	.69	.71	.78	.85	.67
900/120H.T.	B	3,4	S	.71	.71	...	...	.69

B = Briglo (Semi-Dull)

P = Periglo (Semi-Dull)

E = Englo (Dull)

H.T. = High Tenacity

Jet spun® (Colored Yarns)

Den./Fil.	Tenacity	Turns	Weaving Cones	Beams	Colors
100/40	Regular	2.5S	\$1.35	\$1.35	All
150/40	Regular	2.1S	1.17	1.17	All
200/40	Regular	8.0S	1.28	1.28	All
300/120	Regular	2.1S	1.09	1.09	All
450/80	Regular	3.0S	1.05	1.05	All
600/80	Regular	3.4S	1.04	1.04	All
300/40	High	3.4S	1.11	1.11	All
900/120	High	3.4S	1.06	1.06	All

® Registered Trade Mark for American Enka Solution-dyed Rayon Yarn.

Skyloft® (Lofted Rayon Filament Yarns)

Natural and Jet spun®

Denier	Denier per Filament	Twist	Natural	Black	Other Colors
1000	7.5	3.4S	\$.82	\$1.05	\$1.05
5300	15	3.0S&Z	.65	.75	.82

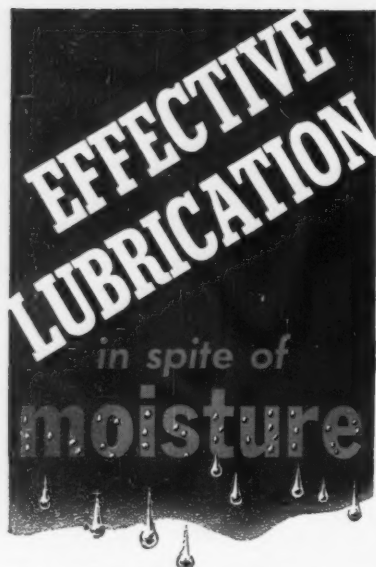
Registered Trademark for American Enka Texturized yarn.

American Viscose Corp.

Effective October 13, 1959

Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	Cones Tubes	Beams Spools	Cakes
75	10-30	Bright	\$1.41	\$1.32	\$1.14	\$1.14	\$1.02
75	30	Dull	...	...	1.14	1.14	1.02
100	14-40	Bright	1.23	1.15	.98	.98	.90



LUBRIPLATE Lubricants provide superior lubrication even in the presence of moisture and steam. They permit high speed operation, have exceedingly long life and do not break down. There is a LUBRIPLATE Lubricant, ranging from the lightest oils to the heaviest greases, to meet every requirement of the textile industry.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE GREASE AND FLUID TYPE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

LUBRIPLATE is available in grease and fluid densities for every purpose... LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.



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New Nylon Harness Eye

Steel Heddle Manufacturing Co. has introduced a new nylon harness eye which is said to have many advantages. Among these are elimination of metal to metal contact, elimination of scoring of wood or frame hang-up and reduction of the possibility of a frame drop. Two screws hold the new eye on the stick, which adds considerably to its pull out strength, according to Steel Heddle.

Wearability tests of the new all-nylon harness eye, according to the manufacturer, have shown that it has excellent endurance. Tests on cam looms, which frequently have an extreme wear condition, have shown no wear after 1,600,000 picks at a speed of 260 picks a minute. The new eye is made so that it contains a hook within its width, and comes in a small size for frames up to and including 7/16" lumber, and in a large size for 1/2" and heavier lumber. It is said to replace any hook or eye now in use, and can be lined up directly over the old hole, giving perfect position on the frame and allowing new holes to be drilled for maximum holding power.

Creslan Color Cards

Franklin Process Co., a division of Indian Head Mills, Inc., will shortly circulate in the trade complete sample color cards on Creslan and Creslan blend yarns. According to Richard Lusignea, director of sales for Franklin, the company is becoming a key resource for the package dyeing of yarns of Creslan acrylic fiber. Franklin has been working closely with the Fibers Division of American Cyanamid Co., producers of the fiber, to perfect package dyeing techniques. In addition to offering yarns of 100% Creslan, the dyer also provides service on blended yarns of Creslan with wool, mohair and angora.

Paper Nonwovens Appraised

Adoption of new manufacturing techniques and dropping of traditional papermaking techniques will be the key to a major breakthrough for the paper nonwoven fabrics industry, according to Howard E. Shearer, of American Viscose Corp. At a recent meeting of the Technical Association of Pulp and Paper Industry, Shearer called on the papermaking machine manufacturers to "adopt means of introducing long dry dispersible fiber directly to the wet end of the web former for immediately casting, with a minimum of refining, into a wet laid web of good strength, high tear and bulking properties." He also asked for new design features to overcome the non-appealing fiber mat appearance of most current nonwovens.

Manmade Fibers Booklet

"Man-Made Fibers Fact Book" has been released by the Man-Made Fiber Producers Association. The 32-page booklet points out that synthetic fibers have been responsible in many ways for revolutionizing America's textile industry. The manmade fiber industry operates 88 plants which cost \$1,881,210,000 to build and equip, and which employ 64,320 employees. The industry, in 1959, spent \$796,783,000 for raw materials, supplies, fuel, utilities and transportation, and paid \$351,607,000 in salaries and wages, the booklet reports.

Whitin Frames to Avondale

Avondale Mills has purchased 95 new Whitin spinning frames for the firm's Catherine plant. The equipment consists of 67 model F5 36-inch Superflex spinning frames, 288 spindles, 4-inch gauge; and 28 model F5 36-inch Superflex spinning frames, 288 spindles, 4-inch gauge with reverse twist. The frames will be equipped with 45 degree roll stands, Super-Draft drafting system with Casablancas GX2 cradles, Whitin Unitrol top weighting and with Bahnson vacuum system of cleaning. Delivery to Avondale Mills will take place early this year.

Light-Resistant Nylon

Chemstrand Corp. has added a light-resistant factor to all Chemstrand nylon fibers, including Cadon nylon multilobal yarn and Cumuloflex nylon, continuous filament textured yarn. The new R-factor, included during manufacturing, substantially increases the resistance of nylon yarns to degradation caused by sunlight or fluorescent light, according to Chemstrand. The company reported the R-factor is particularly important in plants where packages remain in creels for two weeks or longer, with standby packages in creels from two to four weeks.

Chemstrand has issued a bulletin, "Resistance of Chemstrand Nylon to Fluorescent Light and Sunlight Degradation." For free copies write the editors.

More I-J Knit Goods

Iselin-Jefferson Co., Inc., is expanding its circular knit goods operations. Harold H. Greenwald, formerly with M. Lowenstein & Sons, Inc., has joined the Iselin-Jefferson division, where he will style and merchandise a new line of foam coated fabrics. Women's and children's dress and sportswear cotton knits are being produced on newly imported machines. Brushed nylon fabrics for coats and jackets also are included in the new line.

100 60	Dull			1.00	1.00	.92
150 24-40	Bright	1.03	.96	.82	.82	.78
150 40	Semi-Dull	1.03	.96	.82	.82	.78
150 40	Dull			.82	.82	.78
150 90	Dull			.83	.83	.79
200 10-44	Bright	1.01	.94	.81	.81	.77
250 60	Semi-Dull & Dull	1.00	.93	.80	.80	.77
300 15	Bright		.85	.78	.78	....
300 30	Dull Flat Filament				.85	....
300 44	Bright & Dull	.89	.82	.73	.73	.71
300 234	Dull			.83	.83	.81
450 60-100	Bright		.78	.69	.71	.67
600 100	Bright & Dull		.78	.69	.71	.67
900 50-100-150	Bright		.78	.69	.71	.67
1200 75	Bright		.78	.69	.71	....
2700 150	Bright		.78	.69	.71	....

Extra Turns Per Inch

150 40	Bright 6-Turns	\$1.25	\$1.15	\$.90	\$.90	\$.88
200 44	Bright 6-Turns		1.05	.96	.96	....
300 15	Bright 5-Turns			.86	.86	....
300 44	Bright 4.5-Turns			.81	....	.79
300 44	Bright 6-Turns	.97	.90	.86	.86	.84
300 120	Rayflex			.93	.93	....
600 30	Bright 5-Turns		.86	.82	.82	.80

Rayflex Yarns

150 40-60	Rayflex	\$	\$	\$.85	\$.85	\$.81
200 75	Rayflex			.84	.84	.80
300 60-120	Rayflex			.75	.75	.73
450 120	Rayflex			.71	.71	.69
600 234	Rayflex			.71	.71	.69
900 350	Rayflex			.80	.71	.69

Colorspun Yarns

Denier	Type	Cones/Tubes Beams/Spools
75	Regular Strength	\$1.71
100	Regular Strength	1.35
150	Regular Strength	1.17
200	Regular Strength	1.14
300	Regular Strength	1.09
450	Regular Strength	1.05
600	Regular Strength	1.05
900	Regular Strength	1.05
300	High Strength	1.11
450	High Strength	1.06
900	High Strength	1.06
300	Regular Strength 5-Turns	1.19

Avicron Yarns

Denier	Filament	Cones/Tubes Beams/Spools
1800	100-200	Singles & 2 Ply \$6.61
2700	150-300-980	Singles & 2 Ply .58
2700	980	Singles 5 TPI .61

Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams	\$170.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect.

Celanese Fibers Company

Effective October 12, 1960

Viscose Rayon Filament Yarn Prices—Bright and Dull

Denier/Fil/Twist	Beams	Cones	Cakes
75/30/2Z	1.11		
75/30/3	1.11	1.10	.98
100/40/2Z	.97		
100/40/3	.97	.96	.88
100/60/5		1.02	.95
100/60/2Z	NS	.96	
100/60/3		.98	.90
125/40/2Z	.95		
125/40/3	.95	.94	.87
150/40/0	NS	.74½	
150/40/2Z	.81		
150/40/3	.81	.79½	.76
150/40/5		.90	.86
150/40/8		.95	.91
150/40/10		.98	.94
150/90/0	NS	.77½	
250/60/0	NS	.74	
250/60/3		.80	.77
300/50/0	NS	.70	
300/50/2Z	.72		
300/50/3		.70½	.69
450/60/0	NS	.67	
450/60/3		.69	

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U. S. A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlabeled items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Effective October 11, 1960

Bright and Dull

Den.	Fil.	Turns/ Inch Up to	Type	Beams	Cones (A) Tubes	Cakes
40	20	3	Textile "Cordura"		\$1.97	\$1.92
50	20	3	Textile "Cordura"		1.72	1.67
50	35	3	Textile "Cordura"		1.77	
75	30	3		\$1.14	1.14	1.02
100	40	3	Bright	.98	.98	.90
100	60	3	Dull		1.00	.92
125	50	3		.96	.96	.87
150	40	3		.82	.82	.78
150	60	3	Bright	.82	.82	.78
150	60	3	Textile "Cordura"		.875	.845
150	90	3	Dull		.83	
150	100	3	Dull		.83	
300	50	2.5		.73	.73	.71
300	120	3	Textile "Cordura"	.74	.74	.72
450	72	3		.71	.69	.67
600	96	3	Bright	.71	.69	.67
600	240	3	Textile "Cordura"	.72	.70	
900	50	3	Bright	.71	.69	.67
900	144	3	Bright	.71	.69	.67
2700	150	3	Bright	.71	.69	

Thick and Thin

100	40	3	#7 Bright	1.42
150	90	3	#7 Bright	1.08
200	80	3	#7 Bright	1.08
450	100	3	#7 Bright	.82
1100	240	3	#60 Bright	1.03
2200	480	3	#60 Bright	.98

Plush

300	30	3	Dull	.85
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(A) 2¢/lb. additional for cones less than 3¢.

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "CORDURA" and "SUPER CORDURA" are Du Pont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective June 29, 1959

Continuous Process Textile Yarns

Denier	Fila- ment	Turns per In.	Type	Beams	2.5# Cones	4.4# Cones and Tubes
150	40	2.5"S"	Dull	.82	.82	
150	40	2.5"S"	Bright	.82	.82	
200	20	2.5"S"	Bright	.81	.81	
300	44	2.5"S"	Bright	.73	.73	
450	60	2.0"S"	Bright	.69		.69
600	90	1.5"S"	Bright	.69		.69
900	50	2.0"S"	Bright	.69		.69
900	150	2.0"S"	Bright	.69		.69
1100	480	2.0"Z"	Bright extra strong	.66		.66

Lustre #4 is semi-dull.

Prices are subject to change without notice.

Strawn Monofilament

Denier	Fila- ment	Turns per In.	Type	4.4# Cones	Spools and Tubes
450	1	0	Bright and Dull	1.00	1.05
450	1	2	Bright and Dull	1.00	1.05
1250	1	0	Bright and Dull	1.00	1.05
1250	1	2	Bright and Dull	1.00	1.05

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points in continental United States except Alaska.

Prices are subject to change without notice.

North American Rayon Corp.

Current Prices

Denier/Filament	Twist	Knitting* Cones	No Twist Knitting Cones	Weaving Cones, Velvet Cones, Beams, Tubes**	Untreated Cakes
Normal Strength Yarns—NARCO					
75/30	3.5			1.14	1.02
75/30	7			1.27	
75/30	12			1.35	
75/30	15			1.37	
75/30	20			1.40	
100/40/60	3.5			.98	.90
100/40	12			1.22	
125/25/60	3			.96	.87
125/52	10			1.13	

150/42	0		.74%		
150/42/60	3			.82	.78
300/75	0	.80%			
300/75	3		.71	.73	.71
900/46	2.5	.69		.69	
1800/92	2.5	.69		.69	

* Oiled Cones \$.01 per pound extra for Graded Yarns only.

** 1 lb. Tubes \$.02 per pound extra for Graded Yarns only.

*Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

TRIACETATE

Celanese Fibers Company

Current Prices Arnel Yarn Prices
Bright & Dull

Effective August 19, 1958

Denier and Filaments	Cones	Beams	Thick and Thin Cones
55/LTDZ/15	\$...	\$1.20	\$...
55/ZZ/15	1.32	1.33	...
75/LTDZ/20	...	1.16	...
75/ZZ/20	1.21	1.22	...
100/ZZ/26	1.14	1.15	...
150/ZZ/40	.95	.96	...
200/ZZ/40	...	...	...
200/ZZ/52	.92	.93	1.25
300/ZZ/80	.87	.88	1.23
450/ZZ/120	.86	.87	...
600/ZZ/160	.85	.86	1.21

3 to 5 Turns on Cones or Beams—\$.02 Additional

Premium for Black Arnel—\$.25 Per Pound

Premium for Navy Arnel—\$.37 Per Pound

*Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

CELLULOSIC HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective October 17, 1960

Industrial Yarn Prices

Prices Subject To Change Without Notice

TYREX (ENKA II)	Denier/Filament	Standard Beams	Cones
	1100/720	.55	57.5
	1650/1100	.49	51.5
	2200/1440	.48	50.5
	3300/2160	.48	50.5
TYREX FABRIC (ENKA II)			
	1100/720	.67	
	1650/1100	.58	
	2200/1440	.57	
SUPRENKA M			
	1230/720	.55	57.5
	1600/1100	.51	53.5
	1800/1100	.49	51.5
	1870/1100	.49	51.5
	2200/1440	.48	50.5
	2400/1440	.48	50.5
	3300/2160	.48	50.5
	3650/2160	.48	50.5
SUPRENKA MS			
	1100/720	.55	57.5
	1650/1100	.49	51.5
	2200/1440	.48	50.5
	3300/2160	.48	50.5
TEMPRA—MECHANICAL AND CHAFER			
	1100/480	.54	56.5
	1230/480	.54	56.5
	1650/720	.48	50.5
	1820/720	.48	50.5
	2200/960	.47	49.5
	2400/960	.47	49.5
	3300/2160	.47	49.5
TEMPRA—SEWING YARN			
	1130/480 (5.0Z)	.58	58
	1230/480	.60	60
	1750/720	.50	50
	1820/720	.49	49
HIGH TENACITY			
	300/40, 300/120	.75	75
	900/120	.71	71
REGULAR TENACITY			
	100/40	.98	98

* Effective December 1, 1960.

American Viscose Corp.

Effective Dec. 23, 1959

Tyrex*

Tyrex* Viscose Tire Yarn

Denier	Filament	Twist	Beams	Cones
1100	980	0	.55	.575
1100	980	Z	.55	...
1650	1500	0	.49	.515
1650	1500	Z	.49	...
2200	1800	0	.48	.505

Tire Fabric Made with Tyrex* Viscose
Tire Yarn and Cord

Denier	Filament	Carcass	Top Ply	Breaker
1100	980/2	.67	.87	.67
		Factor Open-525	300-490	115-275
1650	1500/2	.58	.59	.615

* Tyrex is a collective trade-make of Tyrex Inc. for Viscose Tire Yarn and Cord.

Rayon Tire Yarn Yarn High Strength

Denier	Filament	Twist	Unslashed Beams	Unslashed Cones	Slashed Beams	Slashed Cones
1100	490	0	...	...	.54	.565
1150	490	Z	.54	.565	...	...
1650	980	Z	.48	.505	...	...
1650	980	0	...	...	.48	.505
1875	980	Z	.48	.505	...	...
2200	980	0	...	...	.47	.495

Super "Rayflex"

Type	Denier	Filament	Twist	Unslashed Beams	Unslashed Cones	Slashed Beams	Slashed Cones
Type 210	1650	980	Z	...	...	.48	...
	1875	980	Z	.48	.505	...	...
Type 120	1800	1500	0	...	.515	...	...
	3300	3000	048	.505	...
	4400	3000	048	.505	...

Chafar Yarn

1100/490 High Strength	5Z Twist	.58	.58
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Adhesive Dipped Yarn or Cord

.06 Premium

"Avisco" Bag Sewing Twine

Sold by The American Thread Company

Prices Effective June 21, 1960

1100/980 Super "Rayflex" 120	0-2Z	Cones	.62
1500/980 Super "Rayflex" 120	0-2Z	Cones	.57
1780/1500 Super "Rayflex" 120	0-2Z	Cones	.55

Also available in Red at 0.7 Premium.

All Yarns Sold "Not Guaranteed for Dyeing".

Tire Fabric

Fila-Denier ment	Type	Factor*	Carcass Open-525	Top Ply 300-490	Breaker 115-275
1650	980/2 Super "Rayflex" 210	.57	.58		.605

* Factor determined by dividing total ends by picks.

Cord on cones in regular Tire Yarn twists same as fabric prices.

Other twist combinations—prices quoted on request.

Special packages take premiums indicated.

4.0 oz Wardwell Tubes	.20
10.5 oz Wardwell Tubes	.10
1.5 lb. Regular Braider Tubes	.06
3.5 lb. Tubes	.045

Single Yarn—Based on cone price.

Plid Yarn—Based on Fabric price.

The following deposit charges are made on invoices:

Beams	\$55.00 each
Crates (Metal)	75.00 each
Fabric Shell Rolls	3.50 each

Same to be credited upon return in good condition—freight collect.

Rayon Tire Yarn and Fabric

*Terms: Net 30 days. Seller to select and to pay transportation charges of common and contract carrier except when shipment moves West of the Mississippi River, in which event the actual cost of transportation to the Mississippi River crossing based on the lowest published freight rate, shall be allowed. Title to pass when merchandise is delivered to consignee. Transportation allowance based on lowest published volume rate shall be granted if merchandise is transported from shipping point in vehicle owned or leased and operated by buyer and title to pass when merchandise is delivered to same.

Price subject to change without notice.

Inferior Yarns (Designated HS-SR) .06 Below First Quality Price
Skein Yarn .04 Above First Quality Cone Price

"Avisco" Bag Twine

1-4# Cones .05 Below First Quality List Price Only
4-10# Cones .05 Below First Quality List Price Only

Adding 6 Turns to "0" Twist Yarn

Celanese Fibers Company

Effective December 27, 1955

Fortisan Yarn Prices

Denier	Packages	Natural	Black
30/2.5/40	2 lb. Cones	\$3.00 lb.	\$3.35 lb.
60/2.5/80	4 " "	2.40 "	2.75 "
90/2.5/120	4 " "	2.25 "	2.60 "
120/2.5/160	4 " "	2.05 "	2.40 "
150/2.5/180	4 " "	1.95 "	2.30 "
270/2.5/360	4 " "	1.85 "	2.20 "
300/2.5/360	4 " "	1.85 "	2.20 "

*Terms: Net 30 days. Shipments prepaid to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

Fortisan-36 Rayon Yarn
Bright

Denier and Filament	Twist	4# cones	8# cones	Tubes	Beams
270/280	0.8Z	\$2.30			
300/280	0.8Z	\$2.05			
300/280	3Z	\$2.20			
400/400	0.8Z	\$1.75			\$1.70
400/400	0				
800/800	0.8Z	\$1.25	\$1.25		\$1.20
800/800	3Z	\$1.40			
800/800	0			\$1.25	
1600/1600	0.8Z	\$1.15	\$1.15		\$1.10
1600/1600	2 1/4 Z	\$1.30			
1600/1600	0			\$1.15	

*Terms: Net 30 days. Shipments prepaid to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Effective November 1, 1960

"Super Cordura"™

Den Fil	Turns/in	Beams	Cones
1100-720	2	.55	.575
1200-720	2		.575
1330-960	2		.570
1600-960	2		.535
1850-1100	2	.49	.515
1800-1100	2	.49	.515
2200-1440	2	.48	.505
2400-1440	2	.48	.505

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corporation

Effective October 26, 1960

Unbleached Bright High Tenacity Yarns

Single End Beams and Cones—Type 100

Denier	Filament	Turns per Inch	Cones	Beams
1100	480	2.0 "Z"	.565	.54
1150	780	2.0 "Z"	.565	.54
1650	720	2.0 "Z"	.505	.48
1700	720	2.0 "Z"	.505	.48
2200	1000	2.0 "Z"	.495	.47
3300	1440	2.0 "Z"	.495	.47

Tyrex**Tyrex Certified Viscose Tire Yarn**

Denier	Filament	Twist	Beams	Cones
1100	720	Z	.575	.55
1650	1100	Z	.515	.49

Terms: Net 30 days f.o.b. point of shipment, title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points in continental United States except Alaska.

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

North American Rayon Corporation

Current Prices

Super Super High Strength Continuous Yarn Type 710	Cones	Beams
1100/720 1.6Z	.55	.58
1650/720/1100 2.0Z	.49	
Tire Cord Fabrics		
Super Super High Strength Type 710		
1100/720		.67
1650/720		.58

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold f.o.b. delivery point.

Prices are subject to change without notice.

CELLULOSIC STAPLE & TOW ACETATE**Celanese Fibers Company**

Effective March 2, 1959

Staple

(Most Deniers Available in Bright or Dull Luster)

Celanese Acetate Staple	
3, 5.5 & 8 Denier (Regular Crimp, Type HC, Type D)	.36
2, 12 & 17 Denier (Regular Crimp, Type HC, Type D)	.37
35 Denier	.38
50 Denier	.40
Type F—5.5 & 8 Denier	.35
Type F—12 & 17 Denier	.36
Type K—(Available under Celanese License Agreement)	.39
¾" to ¾" length (All Deniers)	.03 (Premium)
35 Denier Flat Filament Acetate Tow	.40
Non-Textile Acetate Fibers	.29*

Tow (Celatow)

3, 5.5 & 8 Denier	.37
2, 12 & 17 Denier	.38
35 Denier	.40
35 Denier Flat Filament Acetate Tow	.42
50 Denier	.42

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

* No transportation allowed (F.O.B. shipping point).

Note: Prices on unlisted items can be obtained upon request. Orders are subject to conditions of sale appearing on our acknowledgments of orders.

RAYON**American Viscose Corp. Current Prices****Rayon Staple**

Regular	Bright and Dull \$
"Viscose 22"	.28
1.25 Denier	.31
All Other Deniers	.28
Hi-Crimp	.28
Bleached Crimp	.315
1.5, 3.0 Denier	
Smooth	.30
8.0 & 15.0 Denier Smooth	.32
22.0 Denier	.33
Bleached	
Extra Strength	.40
0.75 Denier	.35
1.0 Denier	
XL	.40
1.0 Denier	.37
1.5, 3.0 Denier	.34
XL	
Fiber 40	.43
1.0 Denier	.40
1.5 Denier	

Colorsun Black Staple

1.5, 3.0, 5.5 Denier	.37
15.0 Denier crimped	.40

Prices of other colors on request.

Tow

1.5, 3.0, 5.5 Denier	.35
9.0 Denier	.37
15.0, 20.0 Denier	.38
Color spun black tow	.42

Terms: Net 30 days.

American Enka Corp.

Current Prices Effective April 1, 1960

Rayon Staple**Regular Crimp**

1.5 and 3 denier	Brt. \$	Dull \$
	.28	.28
High Crimp		
4.5 denier	.28	
6.5 denier	.28	.28
8 denier	.28	
15 denier	.28	.28

Celanese Fibers Company

Effective May 1, 1959

Rayon Tow

1.5, 3, 5.5 D.P.F.	Bright & Dull \$
Total denier 200,000	.37
8 D.P.F.	
Total denier 207,000	.37

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. East of Mississippi River. Transportation prepaid to any U.S.A. destination West of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

Courtaulds (Alabama) Inc.**Rayon Staple**

Regular Rayon Staple Fiber	Bright \$	Dull \$
	.28	.28
Crimped Rayon Staple		
High Crimped Rayon Staple Fiber	.28	.28
Coloray® Solution Dyed Rayon Staple		
Color	Price per lb.	

Black	.32
Oyster	.36
Silver Grey	.41
Mocha	.41
Tan	.41
Medium Brown	.41
Pumpkin	.41
Aqua	.42
Rose	.42
Dawn Pink	.42
Ecru	.42
Dark Brown	.42
Gold	.45
Lilac	.45
Slate Grey	.45
Sulphur	.46
Nugget	.46
Light Blue	.46
Crystal Blue	.47
Apple Green	.47
Sage	.47
Pescok Blue	.48
Medium Blue	.50
Indian Yellow	.51
Dark Blue	.51
Hunter Green	.51
Turquoise	.52
Malachite Green	.53
Red	.58

In addition to the above, Black is also available in:

1½ den. 1¼"	5½ den. 3"
3 den. 1¼"	5½ den. 6"
3 den. 1-9/16"	



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SINCE 1898

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TAUNTON, MASSACHUSETTS
LINDSEY L. PHILLIPS, Treasurer, Taunton, Mass.

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**NO YARN TRAPPING WITH
BRAZED ALUMINUM TWO POUND TAKE-UP BOBBIN**



New aluminum take-up bobbin with barrel and heads brazed together into a single unit prevents yarn trapping. Exceptional strength at price no higher than ordinary bobbins.

Write us today for full details.



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ALLENTOWN PENNSYLVANIA

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The only good thing about static is that the Simco "Midget" now unconditionally guarantees to eliminate it! This safe, rugged, inexpensive static eliminator is designed to fit any machine, is effective on any material. Write today for complete facts. Anti-static cleaning devices and sheet separators, anti-static sprays and static measuring meters are also available.

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Beams for all makes of
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FALL RIVER, MASS.
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SPECIALIZING IN TEXTILES SINCE 1914

Ralph E. Loper Co.

MODERN TEXTILES MAGAZINE

Terms: Net 30 days f.o.b. LeMoyné, Alabama: Minimum transportation allowed to points in U.S.A. east of Mississippi River.

Corval® Cross Linked Rayon

Man-made, cross-linked, regular or crimped cellulosic staple, semi-dull and dull \$.37 per lb.

Topel® Cross-Linked Rayon

Man-made, cross-linked, cellulosic staple, semi-dull and dull \$.37 per lb.

Terms: Net 30 days f.o.b. LeMoyné, Alabama: Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Fibres Co.

Div. Bigelow-Sanford, Inc.

Rayon Staple

Effective October 20, 1960

Regular

1.5 & 3.0 denier Bright & Dull, 1-9/16", 2" .28

White (Crimped)

8 denier 3" Bright28

15 denier 3" Bright28

15 denier 3" Dull28

"KOLORBON"—Solution Dyed Rayon Staple—3" and 4"

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	.39	.39	....
Sandalwood	.39	.39	....
Nutria	.39	.39	....
Sea Green	.39	.39	....
Mint Green	.39	.39	....
Champagne	.39	.39	....
Midnight Black	.39	....	.39
Gold	.39	.39	....
Turquoise	.39	.39	....
Melon	.39	.39	....
Capri Blue	.39	.39	....
Charcoal Grey	.39	.39	....
Coco	.39	.39	....
Sable	.39	....	.39
Tangerine	.59	....	.59
Chinese Red	.59	....	.59
Larkspur Blue	.39	.39	....
Royal Blue	.59	....	.59
Lemon Peel	.48	.48	....
Kelly Green	.45	.45	....
Bitter Green	.59	....	.59
Brazil	....	.39	....
Redwood	....	....	.39
Frost Green	....	.39	....
Mist Grey	....	.39	....
Medium Brown	....	.39	....
Dark Brown	....	.39	.39
Woodtone	....	.39	....
Antique Gold	....	.39	....
Light Turquoise	....	.39	....
Hunter Green	....	.39	....

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

"Zantrel Polynosic" Rayon

Effective August 14, 1959

Man-made, cellulosic staple.

Semi-Bright, 1 denier, 1 9/16" \$.50 per lb.

1 1/2 denier, 1 1/4" and 1 9/16"47 per lb.

3 denier, 1 9/16" and 2"47 per lb.

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

North American Rayon Corporation

Current Prices

Rayon Staple

Super High Tenacity Bright

No. 1 (Unshrunk)

1, 1.5 & 2.3 deniers40

No. 2 (Preshrunk)

1, 1.5 & 3 deniers40

Rayon Tow

High Tenacity

2200/96052

2200/2000525

4400/2000475

4400/2934475

6000/2934425

Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

TRIACETATE

Celanese Fibers Company

Current Prices Effective June 7, 1957

(Most Deniers Available in Bright or Dull Luster)

Arnel Staple and Tow

	Bright & Dull
Arnel Triacetate Staple	
2.5 Individual Denier	\$.55
5.0 Individual Denier	.55
Arnel Triacetate Tow	
2.5 Individual Denier	\$.60
114,000 Total Denier	
5.0 Individual Denier	.60
90,000 Total Denier or	
180,000 Total Denier	
Packaged on Ball Warps	

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

NON CELLULOSIC YARN

NYLON

Allied Chemical Corporation

Caprolan®

Current Yarn Prices:

Effective May 1, 1960

Denier	Fila-ment	Turn/In.	Twist	Type**	Package	1st Grade Price/Lb.
140	16	1 1/2	Z	B	Cones*	\$1.60
140	16	1 1/2	Z	B	Beams	1.65
200	16	1 1/2	Z	B	Cones*	1.49
200	16	1 1/2	Z	B	Beams	1.54
200	32	3/4	Z	B	Bobbins	1.49
200	32	3/4	Z	B	Beams	1.54
210	32	1	Z	HB	Bobbins	1.49
260	16	1	Z	HB	Bobbins	1.49
420	64	1/2	Z	HBT	Bobbins	1.39
420	64	1/2	Z	HBT	Beams	1.44
520	32	1	Z	B	Bobbins	1.39
520	32	1	Z	B	Beams	1.44
840	136	1/2	Z	HBT	Al. Tubes	0.94
840	136	1/2	Z	HBT	Beams	0.92
1680	272	1/2	Z	HBT	Al. Tubes	0.94
1680	272	1/2	Z	HBT	Beams	0.92
1050	56	1/2	Z	B	Al. Tubes	1.15
2100	112	1/2	Z	B	Al. Tubes	1.11
4200	224	0	O	B	Paper Tubes*	1.10
2100	408	0	O	HB	Paper Tubes*	0.97
2500	408	0	O	HB	Paper Tubes*	0.97
3360	544	0	O	HB	Paper Tubes*	0.96
4200	680	0	O	HB	Paper Tubes*	0.96
5000	816	0	O	HB	Paper Tubes*	0.96
5800	952	0	O	HB	Paper Tubes*	0.96
7500	1224	0	O	HB	Paper Tubes*	0.95
10000	1632	0	O	HB	Paper Tubes*	0.95
15000	2448	0	O	HB	Paper Tubes*	0.95

Terms—Net 30 days.

Price subject to change without notice.

Bobbins are invoiced at 45¢ ea.

Aluminum Tubes are invoiced at 40¢ ea.

Beams are invoiced at \$220.00.

Cradles for beams are invoiced at \$53.00.

* Paper Tubes and Cones non-returnable, no charge.

** Type is used to describe luster and tenacity.

All prices quoted F.O.B. Shipping Point.

Minimum transportation charges allowed and prepaid in Continental United States, excluding Alaska.

American Enka Corporation

Enka Nylon Prices

Effective July 1, 1960

Den./Mono.	Fila.	Luster*	Twist	Package	Standard Price Per Pound	Sub-Standard
15/1	SD or D	0.5 Z	Tricot Spools	4.00		
15/1	SD or D	0.5 Z	Pirns-2 lb.	3.89	3.69	
20/1	SD	0.5 Z	Pirns-1 lb.	4.03	3.68	
20/6	D	0.5 Z	Pirns-2 lb.	2.96	2.61	
20/6	D	0.5 Z	Tricot Spools	3.07		
30/6	SD	0.5 Z	Pirns-2 lb.	2.36	2.21	
40/8-13	SD	0.5 Z	Pirns-2 lb.	2.01	1.91	
40/8-13	SD	0.5 Z	Tricot Spools	2.11		
40/8	SD-B de B	0.5 Z	Pirns-2 lb.	2.10	2.00	
40/13	D	0.5 Z	Pirns-2 lb.	2.06	1.96	
40/13	D	0.5 Z	Tricot Spools	2.16		
50/13	SD	0.5 Z	Pirns-2 lb.	1.91	1.76	
50/13	SD-B de B	0.5 Z	Pirns-2 lb.	2.00	1.85	
70/16-32	B-SD	0.5 Z	Pirns-2 lb.	1.71	1.66	
70/32	SD-B de B	0.5 Z	Pirns-2 lb.	1.80	1.75	
100/32	SD-B de B	0.5 Z	Pirns-2 lb.	1.74	1.69	
100/32	SD	0.5 Z	Pirns-2 lb.	1.65	1.60	
140/24-32-64	B-SD	0.5 Z	Pirns-2 lb.	1.60	1.55	
140/32-64	SD-B de B	0.5 Z	Pirns-2 lb.	1.69	1.64	
200/16-34	B	0.6 Z	Cones-4 lb.	1.49	1.44	
200/16-34	B	0.6 Z	Beams	1.54		
200/32	SD-B de B	0.5 Z	Cones-4 lb.	1.58	1.53	
260/16-34	B	0.6 Z	Cones-4 lb.	1.49	1.39	
400/68	B	0.6 Z	Cones-4 lb.	1.39	1.29	
520/32	B	0.6 Z	Cones-4 lb.	1.39	1.29	

*Luster: B—Bright; SD—Semi-Dull; D—Dull; *SD-B de B.

Pirns invoiced at 25¢ or 45¢ each, depending on type. Deposits refunded upon return of pirns in good condition. Cones are not returnable. Spools, Beams and Racks are deposit carriers and remain the property of American Enka Corporation.

Terms: Net 30 days from date of invoice. Minimum common carrier transportation charges will be prepaid and absorbed to first destination in the continental limits of the United States excluding Alaska and Hawaii. In prepaying transportation charges, seller reserves the right to select carrier used.

All prices subject to change without notice.

*B de B—Blanc de Blancs®—White of Whites Color.

The Chemstrand Corp.

Current Prices

Effective August 11, 1960

Denier	Fila-ment	Twist	Type	Package	Standard Price/Lb.	Second Price/Lb.
10	1	O	SD	Bobbins	\$7.16	\$6.56
15	1	O	SD	Bobbins	3.89	3.69
15	1	O	SD	Spools	4.00	
15	1	O	Dull	Bobbins	3.89	3.69
20	7	Z	SD	Spools	4.00	
20	7	Z	SD	Bobbins	2.91	2.61
20	7	Z	SD	Spools	3.02	
30	10	Z	SD	Bobbins	2.36	2.21
30	26	Z	SD	Bobbins	2.49	2.21
40	10	Z	SD	Bobbins	2.01	1.91
40	13	Z	SD	Bobbins	2.01	1.91
40	13	Z	SD	Spools	2.11	
40	13	Z	SD	Warp Wind	2.01	1.91

40	13	O	SD	Draw Wind	2.81	1.91
40	13	Z	Dull	Bobbins	2.06	1.96
40	13	Z	Dull	Spools	2.16	1.96
40	13	O	Dull	Draw Wind	2.06	1.96
50	17	Z	SD	Bobbins	1.91	1.76
50	17	O	SD	Draw Wind	1.91	1.76
50	17	Z	Brt.	Warp Wind	1.81	1.76
70	20	Z	SD	Bobbins	1.71	1.66
70	34	Z	SD	Bobbins	1.71	1.66
70	34	O	SD	Draw Wind	1.71	1.66
70	34	Z	SD	Warp Wind	1.71	1.66
70	34	Z	Brt.	Bobbins	1.71	1.66
70	34	O	Brt.	Draw Wind	1.71	1.66
70	34	Z	Brt.	Warp Wind	1.71	1.66
70	34	Z	HB	Bobbins	1.76	1.66
70	34	O	HB	Draw Wind	1.76	1.66
90	26	Z	SD	Bobbins	1.76	1.66
100	26	Z	SD	Bobbins	1.65	1.60
100	34	Z	SD	Bobbins	1.65	1.60
100	34	Z	HB	Bobbins	1.70	1.60
140	68	Z	SD	Bobbins	1.60	1.55
140	68	Z	HB	Bobbins	1.60	1.55
200	34	Z	HB	Bobbins	1.49	1.44
200	34	O	Brt.	Draw Wind	1.49	1.44
200	34	Z	Brt.	Spools	1.54	1.44
200	68	Z	SD	Bobbins	1.56	1.46
210	34	Z	HB	Bobbins	1.49	1.44
210	34	O	HB	Draw Wind	1.49	1.44
210	34	Z	HB	Warp Wind	1.49	1.44
210	34	Z	HB	Spools	1.54	1.44
210	34	Z	HB	Beams	1.54	1.44
210	34	Z	RHB	Bobbins	1.59	1.44
260	17	Z	HB	Bobbins	1.49	1.39
260	17	Z	HB	Beams	1.54	1.39
420	68	Z	HB	Bobbins	1.39	1.29
520	34	Z	HB	Bobbins	1.39	1.29
720	140	Z	RHB	Tubes	1.04	1.01
720	140	Z	RHB	Beams	1.04	1.01
780	51	Z	HB	Tubes	1.39	1.29
840	140	Z	HB	Tubes	.94	.92
840	140	Z	HB	Beams	.92	.92
840	140	Z	RHB	Tubes	.94	.92
840	140	Z	RHB	Beams	.92	.92
1040	68	Z	SD	Tubes	1.15	1.05
1680	280	Z	HB	Beams	.92	.90
1680	280	Z	RHB	Tubes	.94	.90
1680	280	Z	RHB	Beams	.92	.90
1680	280	Z	RHB	Cones	.95	.91

* Types: D—Dull; SD—Semi-dull; B—Bright; H—High tenacity.
 Bobbins are invoiced at 25¢ or 45¢, depending on type; tubes are invoiced at 40¢ each; spools invoiced at \$95.00, \$110.00, and \$115.00, depending on type; and beams and crates for beams are invoiced at \$220.00 and \$25.00 respectively.
 Prices subject to changes without notice.
 Freight prepaid within Continental United States and Puerto Rico.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
7-1	0	200	Bobbin	\$8.05	\$7.40
10-1	0	200	Bobbin	7.16	6.56
12-1	0	200	Bobbin	6.35	5.85
15-1	0	90	Bobbin	4.90	....
15-1	0	90	Beams	5.01	....
15-1	0	200	Beam	4.00	....
15-1	0	200/280	Bobbin	3.89	3.69
15-1	0	680	Beam	4.00	....
15-1	0	680	Bobbin	3.89	3.69
30-1	0	200/280	Bobbin	4.13	....
20-1	0	200/280	Bobbin	4.03	3.68
14-2	0.22	200	Bobbin	6.72	6.12
17-2	0.22	200	Bobbin	5.96	5.41
20-2	0.22	200	Bobbin	4.71	4.27
15-3	0.22	200	Bobbin	5.19	4.69
21-3	0.22	200	Bobbin	4.70	4.27
20-7	0.52	200	Bobbin	2.91	2.61
20-7	0.52	200	Beam	3.02	....
20-7	0.52	680	Bobbin	2.96	2.61
20-7	0.52	680	Beam	3.07	....
20-20	0.72	200	Bobbin	6.00	....
28-4	0.22	200	Bobbin	2.81	2.61
30-10	0.52	200	Bobbin	2.36	2.21
30-10	0.52	200	Tricot Bms	2.46	....
30-10	0.52	300	Bobbin	2.51	2.36
30-10	0.52	680	Bobbin	2.41	2.21
30-10	0.52	680	Tricot Bms	2.51	....
30-26	0.52	200/280	Bobbin	2.49	2.21
30-26	0.52	200/280	Tricot Beams	2.59	....
40-7	0.52	200	Bobbin	2.11	1.91
40-10	0.52	200/280	Bobbin	2.01	1.91
40-10	0.52	200	Tricot Beams	2.11	....
40-13	0.52	200	Bobbin	2.01	1.91
40-13	0.52	200	Tricot Bms	2.11	....
40-13	0.52	400	Bobbin	2.13	1.90
40-13	0.52	680	Bobbin	2.06	1.96
40-13	0.52	680	Tricot Bms	2.16	....
40-34	0.52	200	Bobbin	2.21	1.81
50-10	0.52	200	Bobbins	2.11	1.76
50-17	0.52	100/200	Bobbin	1.91	1.76
50-17	0	200	Tubes	1.91	1.76
50-17	0.52	680	Bobbin	2.01	1.76
60-34	0.52	300	Bobbin	1.86	1.76
60-20	0.52	200/280/288	Bobbin	1.82	1.66
70-17	0.52	200/288	Bobbin	1.71	1.66
70-34	0	100	Tubes	1.71	1.66
70-34	0.52	100/200	Bobbin	1.71	1.66
70-34	0	105/205	Paper Tube	1.71	1.66
70-34	0	200/285	Tubes	1.71	1.66
70-34	0.52	280	Bobbin	1.71	1.66
70-34	0.52	288	Bobbin	1.71	1.66
70-34	0.52	300	Bobbin	1.76	1.66
70-34	0.52	680	Bobbin	1.76	1.66
70-34	0	680	Tubes	1.76	1.66
80-26	0.52	200	Bobbin	1.71	1.60
90-26	0.52	200/288	Bobbin	1.76	1.66

100-34	0.52	200/288	Bobbin	1.65	1.60
100-34	0.52	300	Bobbin	1.70	1.60
100-34	0	300	Tubes	1.70	1.60
100-34	0.52	680	Bobbin	1.70	1.60
100-50	0.52	200/288	Bobbin	1.71	1.60
110-50	0.52	200	Bobbin	1.71	1.60
140-68	0.52	100	Bobbins	1.60	1.55
140-68	0	200	Tubes	1.60	1.55
140-68	0.52	200/288	Bobbin	1.60	1.55
140-68	0.52	300	Bobbin	1.65	1.55
200-20	1Z	100	Bobbin	1.49	1.44
200-34	0	100	Tubes	1.49	1.44
200-34	0.72	100	Bobbin	1.49	1.44
200-34	0	105	Tube	1.49	1.44
200-34	0.72	100	Bobbin	1.54	1.44
200-68	0.72	100/200	Bobbin	1.56	1.46
210-34	0	300	Tubes	1.49	1.44
210-34	0.72	300	Bobbin	1.49	1.44
210-34	0.72	300	Beam	1.54	1.44
210-34	0	305	Tube	1.49	1.44
210-34	0.72	330	Bobbin	1.49	1.44
260-17	1Z	300/380	Bobbin	1.49	1.39
400-68	0.72	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
420-68	1Z	300	Beams	1.44	1.29
520-34	1Z	300/380	Bobbin	1.39	1.29
630-102	0.72	300	Bobbin	1.39	1.29
780-51	1Z	300/380	Bobbin	1.39	1.29
800-140	0.52	100	Bobbin	1.39	1.29

Nylon Filament "Antron" Yarn Prices

20-7	0.52	560 Brt.	Bobbin	3.06	2.76
20-7	0.52	560 Brt.	Bobbin	3.06	2.76
30-10	0.52	560 S.D.	Bobbin	2.46	2.31
40-13	0.52	560 Dull	Bobbin	2.16	2.06
40-13	0.52	560 S.D.	Bobbin	2.11	2.01
50-17	0.52	560 S.D.	Bobbin	2.01	1.91
70-34	0	560 S.D.	Paper Tube	1.81	1.76
70-34	0.52	560 S.D.	Bobbin	1.81	1.76
70-34	0	560 S.D.	DW Tube	1.81	1.76
200-20	0.72	560 Brt.	Bobbin	1.54	1.49
200-34	0.72	560 S.D.	Bobbin	1.54	1.49
200-34	0	565 S.D.	Paper Tube	1.54	1.49
520-34	1Z	560 Brt.	Bobbin	1.44	1.34
780-51	1Z	560 Brt.	Bobbin	1.44	1.34

* Antron is DuPont's registered trademark for its trilobal multi-filament nylon yarn.

Color-Sealed Black Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
30-10	0.52	140	Bobbin	\$2.71	\$2.56
40-13	0.52	140	Bobbin	2.36	2.16
40-13	0.52	140	Bobbin	2.06	2.01
100-34	0.52	140	Bobbin	2.00	1.95
200-20	0.72	140	Bobbin	1.84	1.79
200-34	0.72	140	Bobbin	1.84	1.79
260-20	1Z	140	Bobbin	1.84	1.79

INDUSTRIAL YARNS

Tire Quality

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
840-140	0.52	300/700	Aluminum Tube	\$94	\$92
840-140	0.52	300/700	Beam	.92	....
840-140	0.52	300/700	Raschel Beam	1.00	....
840-140	0.52	300/700	Cone, Paper Tube	.98	.92
1260-210	0.52	700	Beam	.92	....
1680-280	0.52	700	Aluminum Tube	.94	.92
1680-280	0.52	700	Beam	.92	....
1680-280	0.52	700	Cone, Paper Tube	.98	.92

Industrial Quality

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
840-140	0.52	707	Cone, Paper Tube	.95	....
2520-420	0	700	Paper Tube	.97	....
3360-560	0	700	Paper Tube	.96	....
5040-840	0	707	Paper Tube	.99	....
5040-840	0	700	Paper Tube	.96	....
7560-1260	0	707	Paper Tube	.98	....
7560-1260	0	700	Paper Tube	.95	....
10080-1680	0	707	Paper Tube	.98	....
15120-2520	0	707	Paper Tube	.98	....

These prices are subject to change without notice. Terms: Net 30 Days.

Types

Type 90—Bright, normal tenacity, trilobal—cross section.
 Type 100—Bright, normal tenacity.
 Type 105—Bright, normal tenacity, low shrinkage (5-7%)
 Type 140—Bright, color-sealed, black, normal tenacity.
 Type 200—Semidull, normal tenacity.
 Type 205—Semidull, normal tenacity, low shrinkage (5-7%)
 Type 209—Semidull, normal tenacity, improved light durability and dye light fastness.
 Type 280—Semidull, normal tenacity, improved light durability and dye light fastness.
 Type 288—Semidull, normal tenacity, for Texturing.
 Type 300—Bright, high tenacity.
 Type 305—Bright, high tenacity, low shrinkage (5-7%)
 Type 330—Bright, high tenacity, more heat & light resistant.
 Type 380—Bright high tenacity, improved light durability and dye light fastness.
 Type 400—Semidull, high tenacity.
 Type 560—Luster as designated—Modified cross section.
 Type 565—Luster as designated—Modified cross section, low shrinkage.
 Type 680—Dull, normal tenacity.
 Type 700—Bright, high tenacity.
 Type 707—Bright, high tenacity cordage yarn.
 Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.
 Following are invoiced as a separate item.
 Bobbins—25 cents or 45 cents depending on type
 Aluminum Tube—40¢ each
 Draw Winder Tubes—\$1.00
 Industrial & Section Beams—\$220.00 each
 Racks for Industrial & Section Beams—\$115.00 each

Tricot Beams—\$95.00 or \$250.00 each depending upon type
Racks for Tricot Beams—\$70.00 or \$130.00 each depending upon type
Raschel Beams—\$85.00 or \$100.00 each depending upon type
Racks for Raschel Beams—\$70.00 each
Tricot and Raschel Beams are billed at the above prices if not returned within 90 days from date of invoice.
Section Beams are billed after 60 days, and Industrial Beams are billed after 60 days.
(Beams and Racks are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"

Denier & Filament	Turns/Inch	Luster	Type*	Package	Tubes	1st Gr.
30-14	0	Bright	55	Tube	\$2.60	
30-20	0	Semidull	56	Tube	2.60	
40-27	0	Semidull	56	Tube	2.35	
40-27	0	Bright	55	Tube	2.35	
40-27	0	Dull	57	Tube	2.40	
70-34	0	Semidull	56	Tube	1.97	
70-14	0	Bright	55	Tube	1.97	
70-34	0	Bright	55	Tube	1.97	
70-34	0	Dull	57	Tube	2.02	
100-34	0	Semidull	56	Tube	1.90	
140-28	0	Bright	55	Tube	1.85	
150-34	0	Semidull	56	Tube	1.85	
220-50	0	Bright	51	Tube	1.76	
220-50	0	Bright	55	Tube	1.76	
1100-250	0	Bright	51	Cone	1.50	
1100-250	0	Bright	52	Cone	1.50	
1100-250	Ro2	Bright	52	Cone	1.50	
1100-250	Ro2	Bright	52	Beam	1.52	

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the Continental limits of the U. S., excluding Alaska.

Yarn Types

* Type:

Type 51—Bright, high tenacity.

Type 52—Bright, high tenacity.

Type 55—Bright, normal tenacity.

Type 56—Semidull, normal tenacity.

Type 57—Dull, normal tenacity.

Tubes are invoiced as a separate item at \$.70 each.

Industrial beams and cradles are billed if not returned within 60 days from date of invoice. They are then billed as separate items at \$220.00 per beam and \$115.00 per cradle and are returnable for credit.

"DACRON" is DuPont's registered trade-mark for its polyester fiber.

SARAN

The National Plastics Products Company—

Fibers Division

Odenton, Maryland

Current Prices:

CONTINUOUS FILAMENT

Type	Twist p. l.	Natural	Colors
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750/20*

* For filter fabrics and other industrial purposes only.

F.O.B. Odenton, Maryland.

Terms: Net 30 days.

NON CELLULOSIC STAPLE & TOW

ACRYLIC

American Cyanamid Co.

Fibers Division

Effective Date: December 21, 1960

Cyanamid Acrylic Staple

Denier	Type	1st Grade Price (per pound)
2.0 Denier Bright and Semi-Dull		\$1.28
3.0 Denier Bright and Semi-Dull		1.22
5.0 Denier Bright and Semi-Dull		1.22
15.0 Denier Bright, Semi-Dull and Dull		.95

Staple Lengths: 1½", 2", 2½", 3", 3½", 4", 4½".

Information provided on request for Deniers, Lengths and Lustres not listed above.

Prices are subject to change without notice.

Terms: Net 30 days.
F.O.B. Shipping Point—Minimum transportation allowed (Seller's route and method) within the continental limits of the United States excluding Alaska. If Buyer requests and Seller agrees to a route or method involving higher than minimum rate, Buyer shall pay the excess transportation cost.

Note: CRESLAN® is Cyanamid's registered trademark for certain of its acrylic fibers. Use of this trademark is authorized only on properly constructed fabrics, after they have been tested and approved by Cyanamid.

The Chemstrand Corp.

"Acrlan"

Current Prices Effective January 1, 1961

Denier	Type	Regular Acrlan "A" Qual.	2nd Qual.	Acrlan 16 "A" Qual.	2nd Qual.
1.0	Staple	\$	\$	\$1.28	\$
2.0	Staple	1.22	1.03	1.22	1.03
2.0	Tow	1.22	1.03	1.22	1.03
2.5	Hi-Bulk Staple	1.22	1.03	1.22	1.03
2.5	Hi-Bulk Tow	1.22	1.03	1.22	1.03
3.0	Staple	1.22	1.03	1.22	1.03
3.0	Tow	1.22	1.03	1.22	1.03

5.0	Staple	1.22	1.03	1.22	1.03
5.0	Tow	1.22	1.03	1.22	1.03
8.0	Staple	1.18	1.03	1.18	1.03
8.0	Tow	1.18	1.03	1.18	1.03
15.0	Staple	.95	.....	.95	.....
15.0	Tow	.95	.....	.95	.....

Staple and Tow available in Bright and Semi-Dull lusters.

Acrlan Spectran™

	Dark	Light
2.5 Staple	1.39	1.29
3.0 Staple	1.39	1.29
3.0 Tow	1.44	1.34

Acrlan Spectran—Staple and Tow available in Bright lusters only.

Dark—Black, Dark Blue, Brown, Dark Grey and Olive.

Light—Taupe, Gold, Beige and Light Grey.

Fiberfill 1.01

Types 77, 88 and 89 Staple97

TERMS: Net 30 Days.

F.O.B. shipping point, freight prepaid: seller to select and pay transportation charges of carrier to points within the continental limits of the United States, excluding Alaska.

* "Acrlan" is Chemstrand's registered trademark for its acrylic fiber.

The Dow Chemical Company

Textile Fibers Department Current Prices

"Zefran" Acrylic Staple

2.0 denier Semidull & Bright—Staple only \$1.28

3.0 denier Semidull & Bright—Staple only 1.28

6.0 denier Semidull & Bright—Staple only 1.18

100% Blends of ZEFRAIN acrylic fiber (For the Woolen System)

Type W-2 (average denier of about 2.5) \$.99

Type W-4 (average denier of about 4.5)94

Terms: Net 30 days.

Transportation Terms: F.O.B. shipping point—Freight prepaid our route within the continental limits of the U. S., excluding Alaska.

* Registered trademark of The Dow Chemical Co.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

"Orlon" Acrylic Staple & Tow

Type 42	Staple Length	Tow Blds.	1st Grade
2.0 Denier Semidull & Bright	1½, 1½, 2, 2½, 3, 4½	470M	1.28
3.0 Denier Semidull & Bright	1½, 1½, 2, 2½, 3, 4½	470M	1.30
3.0 Denier Color-sealed Black	1½, 1½, 2, 2½, 3, 4½	470M	1.63
6.0 Denier Semidull & Bright	1½, 2, 2½, 3, 4½	470M	1.20
6.0 Denier Color-sealed Black	1½, 2, 2½, 3, 4½	470M	1.55
4.5 Denier Semidull	1½, 2, 2½, 3, 4½	470M	1.18
10.0 Denier Semidull & Bright	1½, 2, 2½, 3, 4½	470M	1.18
10.0 Denier Color-sealed Black	1½, 2, 2½, 3, 4½	470M	1.55

High Shrinkage Staple price as Regular Staple

Type 75 \$1.08

This product is designed for Cotton/Rayon System Spinning and is 2.5 denier, 1½" semidull regular shrinkage staple.

Type 39 \$.94

This product is designed for woolen system spinning and is a blend of deniers (average 4.2) with a variable cut length.

Type 39A \$.99

This product is designed for woolen system spinning and is a blend of predominately fine deniers (average 2.4) with a variable cut length.

Type 39B \$.94

This product is designed for woolen system spinning and is a blend of predominately heavy deniers (average 6.5) with a variable cut length.

"ORLON SAYELLE"™

Type 21

3.0 denier semidull variable (2½" to 5" average 3½") staple \$1.45

6.0 denier semidull variable (2½" to 5" average 3½") staple 1.40

F.O.B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "ORLON" is Dupont's Registered Trade-mark for its Acrylic Fiber.

"ORLON SAYELLE"™ is Dupont's Registered Trade-mark for its bi-component Acrylic fiber.

MODACRYLIC

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Current

"Verel" Staple and Tow

Deniers	Dull and Bright
2 and 3	\$1.02 per pound
5, 8, and 12	.92
16 and 20	.88
24 denier	.93

Prices are subject to change without notice.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Verel" is a trade-mark of the Eastman Kodak Co.

Union Carbide Chemicals Co.

Div. Union Carbide Corp

Textile Fibers Dept.

Effective December 1, 1959

Dynel Staple & Tow

Natural Dynel		
2, 3, 6, 12 Denier, Staple and Tow		1.10 per lb.
Liner blend, Staple only		.92 per lb.
24 Denier, Staple and Tow		1.05 per lb.
12 Denier, Type 80, Staple and Tow		.85 per lb.
3 Denier Type 63, High Shrinkage, Staple and Tow		1.15 per lb.

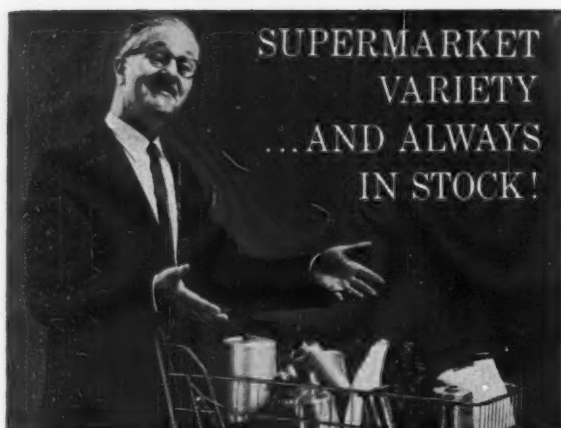
Dynel Spun with Colors:

Blond, Pewter, Gray, Brown, Charcoal, Black

3 and 6 Denier, Staple and Tow 1.20 per lb.

3 Denier Type 63, High Shrinkage, Staple and Tow 1.30 per lb.

Prices are quoted F.O.B. shipping point, freight prepaid our route, within continental limits United States, excluding Alaska and Hawaii.



**SUPERMARKET
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*T.M.

125 WEST 41st STREET, NEW YORK 36, LONGACRE 3-4200

AATT Elects New Officers

Kurt J. Winter, textile consultant, has been elected president of the American Association for Textile Technology, Inc., for 1961. Giles E. Hopkins, also a textile consultant, was elected first vice president, and John M. Holland, Pepperell Manufacturing Co., second vice president.

Elected to the Board of Governors as new members were Frederick E. Anderson, American Cyanamid Co.; C. Eugene Coke, Hartford Fibres Co.; and Albert E. Johnson, National Institute of Drycleaning. Members of the Board of Directors who continue in office from last year are J. Fred Murray, Chemstrand Corp.; Genevieve M. Smith, Sears, Roebuck & Co.; Donald M. Goerg, Celanese Fibers Co.; Arthur E. Jerome, Arthur E. Jerome Co.; and Graham M. Richardson, the Du Pont Co.

For 1961, Hugh J. Beard, Burlington Industries, was elected chairman of the New York Chapter of AATT; J. Edward Lynn, textile consultant, vice chairman; Richard W. Nelson, Chemstrand Corp., treasurer, while members of the executive committee for the year are Jerome Campbell, Modern Textiles Magazine, Graham M. Richardson, the Du Pont Co., and Betty G. Wadsworth, Parents Magazine.

Officers of the Appalachian Chapter elected are: Wallace T. Jackson, Eastman Chemical Products, Inc., chairman; Robert T. Crawford, also Eastman Chemical Products, vice chairman; Robert L. Beard, Tennessee Eastman Co., secretary; Mildred L. Wetzell, Tennessee Eastman Co., treasurer. Members of the Appalachian Chapter's executive committee are: Arthur Cresswell, North American Rayon Corp., Emmett V. Martin, Tennessee Eastman Co., Howard A. Thompson, also Tennessee Eastman Co.

Officers of the Piedmont Chapter elected for 1961

are: A. Frank Tesi, Celanese Fibers Co., chairman; D. S. Hamby, North Carolina State College, School of Textiles, vice chairman; Charles D. Coleman, Jr., J. P. Stevens & Co., Inc., secretary; A. E. McKenna, Clemson Textile School, treasurer. Members of the Piedmont Chapter's executive committee are: H. F. Elsom, Celanese Fibers Co., Alice Balfrey, Deering, Milliken Research Corp., and Austin L. Elliott, Jr., Eastman Chemical Products, Inc.

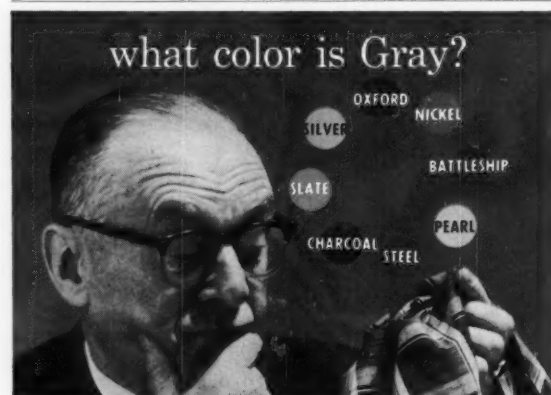
It was also announced that the Board of Governors of AATT had appointed to the technical committee Charles Reichman, editor, National Knitted Outerwear Times, and Harry F. Creegan, James Hunter Machine Co.

New Heat-Resistant Fiber

Minnesota Mining & Manufacturing Co. has developed an all-organic heat-resistant fiber, "Pluton." The fiber, said to retain its flexibility and part of its strength after exposure to intense heat, is available as a fabric. It also can be worked into laminates reinforced with high-temperature phenolic resin to form structural parts or molding compounds. The company said that the new fiber has been exposed in a plasma jet to temperatures up to 10,000 degrees kelvin (about 18,000 degrees F.) without melting.

Acrlan Nonwoven Fabrics

Chemstrand Corp. has disclosed development work is being conducted on nonwoven fabrics of Acrlan acrylic fiber for the apparel field and for industrial applications where an overlay is needed. John H. Barrows, manager of industrial merchandising for the company, pointed out that a veil of the nonwoven fabric is saturated with a resin that is compatible to the material it is covering and, after processing, a hard, smooth surface results. Barrows said that one Acrlan nonwoven now commercially available is battling for upholstery.



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**Rayon • Nylon • Acetate • Stretch Yarns
Cakes • Packages • Skeins**

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Any degree of color fastness. Packaged as desired.

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Yarn Corporation

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PLANT: 86 CRARY ST., PROVIDENCE, R. I.

NYLON

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices
Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	1st. Grade Price/Lb.	2nd Grade Staple Only
1.5	200	1 1/2"-4 1/2"	None made	\$1.33	\$1.18
1.5	201	1 1/2"-4 1/2"	None made	1.35	1.20
2.3	420	1 1/2" only	None made	1.28	1.13
3.0	100/200	1 1/2"-4 1/2"	430M	1.28	1.13
3.0	101/201	1 1/2"-4 1/2"	455M	1.30	1.15
6.0	100	1 1/2"-6 1/2"	330M	1.28	1.13
6.0	101	1 1/2"-6 1/2"	345M	1.30	1.15
15.0	100	1 1/2"-6 1/2"	425M	1.08	.....
15.0	101	1 1/2"-6 1/2"	None made	1.10	.....
15.0	600	1 1/2"-6 1/2"	425M	1.10	.....
15.0	601	1 1/2"-6 1/2"	None made	1.12	.....

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows:

1 1/2, 1 3/4, 2, 2 1/4, 3, 4 1/2 and 6 1/2

Types

Type 100 Bright, normal tenacity, not heatset.
Type 101 Bright, normal tenacity, heatset.
Type 200 Semidull, normal tenacity, not heatset.
Type 201 Semidull, normal tenacity, heatset.
Type 420 Semidull, high tenacity, high modulus, no crimp.
Type 600 Dull normal tenacity, not heatset.
Type 601 Dull normal tenacity, heatset.
These prices are subject to changes without notice.
Terms—Net 30 Days.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

NYTRIL

Celanese Fibers Company

DARVAN

Effective Nov. 21, 1958

Type	Price Per Pound
3, 4 1/2 and 6 Denier	Not Crimp Set \$1.45 Crimp Set \$1.55
1 1/2, 2 Denier	\$1.50

Pack in 100 Lb. and 500 Lb. Bales, Net
Staple lengths 1 1/2, 2, 3, 4 1/2
Tow—90,000 Total Denier
Bright, Semi-dull, Dull

(Deniers and lengths of staple not listed above are available upon special request.)

Terms: Net 30 Days.

F.O.B. Shipping Point (Avon Lake, Ohio) Minimum freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if overlaid, or port of exit of purchaser's choice east of the Mississippi River.

OLEFIN

Beaunit Mills Inc.

Fibers Division Effective November 1, 1960

Polypropylene Bright Staple

Denier	Price per lb.
1.5	\$.90
3.0	.90
6.0	.90
15.0	.90

Staple cuts are 1 1/2", 2" and 3".

Other lengths are available on request.

Terms: Net 30 days F.O.B. shipping point. Minimum Freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices subject to change without further notice.

POLYESTER

Beaunit Mills Inc.

Vycron Polyester

Current Prices

Denier	Price Per Lb.
1.5	\$1.00
3.0	1.00
6.0	1.00
15.0	1.00

Staple Cuts are 1 1/2" to 6".

Tow for Converters (Tow Bundle 200,000 Denier)
Spun Dyed Black 15¢ per lb. extra.

Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

"Dacron"*** Staple and Tow

Denier	Luster	Type*	Length	Tow Bundle	1st Gr.
1.5	Semidull	54	1 1/2"-1 1/2"	None made	1.26
2.25	Semidull	64	1 1/2"-4 1/2"	450M	1.41
3.0	Semidull	54	1 1/2"-4 1/2"	450M	1.36
3.0	Semidull	61	1 1/2"-4 1/2"	None made	1.36

3.0	Semidull	64	1 1/2"-4 1/2"	450M	1.41
4.5	Semidull	54	1 1/2"-4 1/2"	450M	1.31
4.5	Semidull	64	1 1/2"-4 1/2"	450M	1.36
6.0	Semidull	54	1 1/2"-4 1/2"	450M	1.31
6.0	Semidull	61	1 1/2"-4 1/2"	None made	1.31
6.0	Semidull	64	1 1/2"-4 1/2"	450M	1.36

* Type:

Type 54—Semidull, Normal Tenacity.

Type 61—Industrial Staple having 45% Shrinkage. Not intended for Dyeable Uses.

Type 64—More Pill Resistant Staple, with Greater Dyeing Versatility.

"Dacron" Polyester Color-Sealed Black Staple and Tow

2.25	Color Sealed Black	64	1 1/2"-4 1/2"	450M	1.76
3.0	Color Sealed Black	64	1 1/2"-4 1/2"	450M	1.76

F. O. B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

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Eastman Chemical Products, Inc.

Tennessee Eastman Co. Current

"Kodel"***

Deniers	Semi-Dull Staple	Tow	Black	Staple and Tow Brown	Blue
1.5	\$1.33	\$1.41	.....	.....	.....
2.25	1.41	1.41	\$1.76	.....	.....
3.0	1.41	1.41	1.76	\$1.86	\$1.96
4.5	1.36	1.36	.....	.....	.....

Terms: Net 30 days. Payment—U S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Kodel" is a trade-mark of the Eastman Kodak Company.

Celanese Fibers Company

Current Prices Effective June 10, 1960

Fortrel Polyester Staple and Tow

Denier	Luster	Price
1.5	Semi-dull	\$1.26
3	Semi-dull	1.36
4.5	Semi-dull	1.31
6	Semi-dull	1.31

Staple lengths 1 1/2", 2" and 3".

All staple packaged in 500 pound bales.

Denier	Luster	Price
1.5	Semi-dull	\$1.36
3	Semi-dull	1.36
4.5	Semi-dull	1.31
6	Semi-dull	1.31

Total denier of all tow is 225,000.

All tow packaged in 300 to 400 pound cartons.

TERMS: Net 30 days. F.O.B. destination—Freight prepaid our route within the continental limits of the United States, excluding Alaska. Prices subject to change without notice.

VINYON

American Viscose Corp. Effective October 1, 1956

Avisco Vinyon Staple

1.5 denier 1 1/2" Unopened	\$.90 per lb.
3.0 denier 1 1/2" Unopened	.80 per lb.
3.0 denier 1 1/2" Unopened	.80 per lb.
3.0 denier 1 1/2" Opened	.90 per lb.
3.0 denier 2" Opened	.90 per lb.
5.5 denier 1" Opened	.90 per lb.
5.5 denier 1 1/2" Unopened	.80 per lb.

Terms: Net 30 days.

SARAN

The National Plastics Products Company—

Fibers Division

Odenton, Maryland

Current Prices: Saran Staple

Type	Denier	Natural	Colors
2Y—Upholstery	22	\$0.70	\$0.75
2Y—Upholstery	16	.74	.79
3Q—Industrial Fabrics	22	.68	.72
1C—Carpets	22	.68	.72
1M—Mops	22	.68	.72

In any staple length 1 1/2" to 6". Also 45 denier, 7" cut.

F.O.B. Odenton, Maryland.

Terms: net 30 days.

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New method for printing carpets

A NEW AND PATENTED METHOD for printing multi-colored designs on the pile face of carpet fabrics in one strike was revealed last month by Bigelow-Sanford, Inc., at the Home Furnishings Market in Chicago. By the new method, multi-colored patterns are applied to undyed carpet by a precision forcing of the tufts into the shaped dye-wells of a pattern mold. Deep-penetrating dyes, regulated by control pumps, impregnate the tufts to the depth of the carpet's pile. The method is capable of creating multi-colored patterns with great clarity and definition in both cut and loop pile.

In its full scope, the new pattern-making method can be applied to any carpet construction, fiber or texture; it is effective on all pile depths and densities, and is capable of creating almost any figure or design. For tufted carpet, it ends the pattern limitations that have restricted the construction's styling. For woven carpet, it has capacity to eliminate the restriction of certain pattern types to specific weaves.

In the tufted construction, Bigelow spokesmen noted, defined multi-colored pattern previously was possible only by the device of over-tufting, which is substantially limited to small-sized rugs and is restricted in the types of patterns it can make. (By this technique, pile-yarns of a different color are tufted over the tops of the carpet's original pile yarns.) In contrast, the new Bigelow method applies the pattern directly, has broad pattern-making scope, and can be

applied to all sizes and widths. It is said to be faster, more versatile and less costly.

Bigelow's president L. P. Weicker said that the new method was developed after three years' research at a cost of more than \$1 million. Both the process and apparatus for applying it to fabrics is protected, he stated, by U.S. and foreign patents.

At the January Market, Bigelow displayed three qualities of carpets printed by the new method. Trademarked "Tuft-Dyed," each of the three groups has a different texture effect and each a different pattern and each was tufted with different fibers in its pile. The textures, respectively are random high-low loops, overall textured loops, and smooth cut pile. The designs are respectively monochromatic scroll, provincial block and a picture rug. The fibers of which the three qualities of carpet are made are respectively Du Pont 501 textured filament carpet nylon; rayon, and wool.

Many persons who saw the carpets on display in Chicago commented favorably on the variety of designs achieved by the new printing method as well as their complexity of patterns and sharpness of definition. It was pointed out that the new method will enable Bigelow to produce carpet fabrics in the gray and print them just prior to delivery to customers in such patterns as the customers may request. By this method, it may be possible to reduce losses which can occur when yarn-dyed patterned fabrics are made which turn out to be unpopular with buyers.

CHEMICAL TEXTILE FIBERS APPLICATIONS RESEARCH AND SERVICE

The Applications Research and Service Department of The Chemstrand Corporation, a major producer of chemical textile fibers, is seeking candidates for these attractive assignments at its Decatur, Alabama facilities:

TEXTILE DEVELOPMENT ENGINEER—Assist with coordination of technical and administrative functions of the Applications Research and Service Department including liaison within the Department and with the Corporation's customers. Bachelors degree in scientific or textile field and 10-15 years of textile or related experience with sound knowledge of textile markets required.

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DYEING EVALUATION CHEMIST—Investigation of kinetics of diffusion in solids; adsorption of surface-active materials by high polymers; zeta potentials of fibers; and other properties of fibers related to absorption of dyes and textile chemicals. Doctorate in physical or physical-organic chemistry required with academic and/or industrial research background in above areas.

TECHNICAL WRITER—Preparation of technical information bulletins and instruction manuals for customers, coordination of printing and distribution of brochures and manuals, and preparation and editing of technical articles and papers for textile trade publications. Bachelors degree or equivalent in chemistry, textile engineering or related field and 3-5 years experience in above functions in the chemical or textile industry required.

CARPET DEVELOPMENT SPECIALIST—Evaluation of Chemstrand's and competitive carpet fibers. Bachelor's degree in textile engineering or chemistry or related field and 10 years carpet development and/or evaluation experience required. Background in development and evaluation of woven and tufted constructions necessary. Experience in evaluation of new or improved fibers and working knowledge of textile yarn spinning processes and statistics desirable.

TEXTILE FIBER EVALUATION ENGINEER—Evaluation of Chemstrand's and competitive fibers and development of end-use applications. Bachelors degree in textile engineering or related field with minimum of 2 years experience in fiber, yarn, and fabric technology and an appreciation of tactile qualities of textiles required. Textile testing, processing, and finishing background required. Experience in chemical fiber processing, statistical design of experiments, and statistical interpretation of data helpful.

Send resume of academic training, employment, and salary history in confidence to:

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High Speed Warper

Allen Co., Inc., is distributing literature describing in detail its model G high speed warper for cotton, rayon, woolen and worsted, synthetics, paper, covered rubber and Du Pont Lycra yarns. The model is said to solve the problem of uniform warp density, with a patented hydraulic system automatically maintaining uniform density controlled pressure between the drive-pressor cylinder and the yarn being warped. The warper is operated by a safety control rod which extends over the full width of the machine. *For further information write the editors.*

Nylon Heel Spring Shell

H. F. Livermore Corp. is marketing its new heel spring shell. The all-nylon construction of the shell is said to increase spring life because the metal-to-metal contact between the spring and the shell has been eliminated. No lubrication is required with the all-nylon product. The shell, which features a slightly concave outer face to prevent the heel strap from slipping off, can be used on all Draper looms and C & K "C" and "S" loom series equipped with parallels taking a 3/8-inch diameter heel spring shell bolt. *For further information write the editors.*

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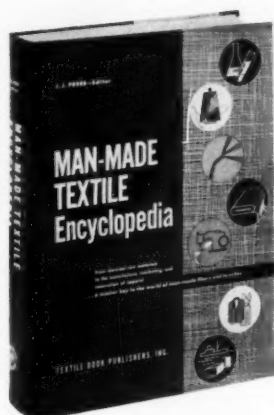
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Calendar of Coming Events

Feb. 7-9—2nd Canadian Textile Conference sponsored by Textile Technical Federation of Canada and Primary Textiles Institute. Queen Elizabeth Hotel, Montreal, Que.
 Feb. 8—AATT annual meeting. Hotel Commodore, New York, N. Y.
 Feb. 15—American Textile Machinery Association, Annual Meeting, Algonquin Club, Boston, Mass.
 Feb. 16-17—American Society for Quality Control Textile and Needle Trades Division annual conference. Robert E. Lee Hotel, Winston-Salem, N. C.
 Mar. 20-22—American Physical Society meeting. Monterey, Calif.
 Mar. 1—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
 Mar. 21-23—High-Polymer Physics Div., American Physical Society meeting. Monterey, Calif.
 Mar. 23-25—ACMI annual meeting. Fontainebleau Hotel, Miami Beach, Fla.
 Apr. 5—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
 Apr. 12-14—Alabama Textile Manufacturers Association annual meeting. Buena Vista Hotel, Biloxi, Miss.
 Apr. 16-18—Narrow Fabrics Institute spring meeting. The Tides Inn, Irvington, Va.
 Apr. 18-19—Technical Advisory Committee and Board of Trustees meeting. Institute of Textile Technology, Charlottesville, Va.
 Apr. 23—Georgia Textile Operating Executives spring meeting. Hightower Building, Georgia Institute of Technology, Atlanta, Ga.

Apr. 24-25—Underwear Institute annual meeting. Hotel Dennis, Atlantic City, N. J.
 Apr. 24-28—Knitting Arts Exhibition. Auditorium, Atlantic City, N. J.
 Apr. 26-29—Georgia Textile Manufacturers Association annual meeting. Hollywood Beach Hotel, Hollywood, Fla.
 Apr. 29—Alabama Textile Operating Executives spring meeting at Thach Auditorium, Auburn, Alabama.
 May 3—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
 May 5-6—Phi Psi Fraternity, 58th annual meeting, Shoreham Hotel, Washington, D. C.
 Jun. 5-8—ISA Summer Instrument-Automation conference and exhibit. Toronto, Canada.
 Jun. 5-9—Society of the Plastics Industry annual national conference and exposition. Commodore Hotel and Coliseum, New York, N. Y.
 Jun. 7—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
 Jul. 27-Aug. 1—IUPAC International Symposium on Macromolecular Chemistry. Queen Elizabeth Hotel, Montreal, Canada.
 Sept. 27-29—AATCC National Convention, Hotel Statler, Buffalo, N. Y.
 Nov. 13-15—Narrow Fabrics Institute, Inc. meeting. Statler-Hilton, New York, N. Y.

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